Structure of UG Single Core Discipline Program

DSC: Discipline Specific Course
DSE: Discipline Specific Electives
GE: General Electives
AEC: Ability Enhancement Course
IL - Pool of Indian Languages in the 8th schedule of the Constitution

SEC: Skill Enhancement Course
IAPC: Internship/Apprenticeship / Project/ Community Outreach
VAC: Value Addition Course
⊗ : Not Applicable

First Year

SEM - I

Discipline Specific Course - 1, Credit - 4
Discipline Specific Coursre - 2, Credit - 4
Discipline Specific Coursre - 3, Credit - 4

DSE ⊗ Credit - 4 | GE 1 Credit - 4 | AEC Credit - 2 | SEC 1 Credit - 2 | IAPC ⊗ Credit - 2 | VAC 1 Credit - 2 | **Total Sem Credits - 22**

IL - 1 / Environment Sc - 1
One from the Pool of VAC Courses
One from the Pool of GE Courses
One from the Pool of SEC Courses

SEM - II

Discipline Specific Course - 4, Credit - 4
Discipline Specific Course - 5, Credit - 4
Discipline Specific Course - 6, Credit - 4

DSE ⊗ Credit - 4 | GE 2 Credit - 4 | AEC Credit - 2 | SEC 2 Credit - 2 | IAPC ⊗ Credit - 2 | VAC 2 Credit - 2 | **Total Sem Credits - 22**

IL - 1 / Environment Sc - 1
One from the Pool of VAC Courses
One from the Pool of GE Courses
One from the Pool of SEC Courses

IL - 1 and IL - 2 should be of the same Language

Total Credits = 44
Exit After Completing One Year
Undergraduate Certificate in the field of Study/Discipline

Second Year

SEM - III

Discipline Specific Course - 7, Credit - 4
Discipline Specific Course - 8, Credit - 4
Discipline Specific Course - 9, Credit - 4

DSE 1 Credit - 4 OR GE 3 Credit - 4 | AEC Credit - 2 | IAPC Credit - 2 OR SEC 3 Credit - 2 | VAC 3 Credit - 2 | **Total Sem Credits - 22**

One from the Pool of DSE Courses
IL - 2 / Environment Sc - 2
One from the Pool of VAC Courses
One from the Pool of GE Courses
One from the Pool of SEC Courses

SEM - IV

Discipline Specific Course - 10, Credit - 4
Discipline Specific Course - 11, Credit - 4
Discipline Specific Course - 12, Credit - 4

DSE 2 Credit - 4 OR GE 4 Credit - 4 | AEC Credit - 2 | IAPC Credit - 2 OR SEC 4 Credit - 2 | VAC 4 Credit - 2 | **Total Sem Credits - 22**

One from the Pool of DSE Courses
IL - 2/ Environment Sc - 2
One from the Pool of VAC Courses
One from the Pool of GE Courses
One from the Pool of SEC Courses

Total Credits = 88
Exit After Completing Two Years
Undergraduate Diploma in the field of Study/Discipline

Third Year

SEM - V

Discipline Specific Course - 13, Credit - 4
Discipline Specific Course - 14, Credit - 4
Discipline Specific Course - 15, Credit - 4

DSE 3 Credit - 4 | GE 5 Credit - 4 | AEC ⊗ Credit - 2 | IAPC Credit - 2 OR SEC 5 Credit - 2 | VAC 1 ⊗ Credit - 2 | **Total Sem Credits - 22**

One from the Pool of DSE Courses
One from the Pool of GE Courses
One from the Pool of SEC Courses

SEM - VI

Discipline Specific Course - 16, Credit - 4
Discipline Specific Course - 17, Credit - 4
Discipline Specific Course - 18, Credit - 4

DSE 4 Credit - 4 | GE 6 Credit - 4 | AEC ⊗ Credit - 2 | IAPC Credit - 2 OR SEC 6 Credit - 2 | VAC 1 ⊗ Credit - 2 | **Total Sem Credits - 22**

One from the Pool of GE Courses
One from the Pool of SEC Courses

Research Methodology' shall be offered as one of the DSE courses in the VI and VII semesters. Students can opt for it either& in VI or VII semester. However, students planning to pursue 4 year UG program are advised to choose research methodology in the VI semester.

Total Credits = 132
Exit After Completing Three Years
Bachelor of (field of Study) (Honours) Discipline

Fourth Year

SEM - VII

Discipline Specific Course - 19, Credit - 4

DSE Credit - 4 DSE Credit - 4 DSE Credit - 4 OR DSE Credit - 4 DSE Credit - 4 GE Credit - 4 OR DSE Credit - 4 GE Credit - 4 GE Credit - 4

Dissertation on Major Credits - 6 OR Dissertation on Minor Credits - 6 OR Academic Project/Entrepreneurship Credits - 6

Total Sem Credits - 22

The Dissertation, Academic Project / Entrepreneurship will start in VII Sem and the same will continue in VIII Sem. However, the evaluation and assessment will be done in VII Sem as well as in VIII Sem.

SEM - VIII

Discipline Specific Course - 19, Credit - 4

DSE Credit - 4 DSE Credit - 4 DSE Credit - 4 OR DSE Credit - 4 DSE Credit - 4 GE Credit - 4 OR DSE Credit - 4 GE Credit - 4 GE Credit - 4

Dissertation on Major Credits - 6 OR Dissertation on Minor Credits - 6 OR Academic Project/Entrepreneurship Credits - 6

Total Sem Credits - 22

Total Credits = 176
Bachelor of (Field of Study/Discipline) (Honours with Research/Academic Projects/Entrepreneurship) Discipline

Important note: Students studying DSEs offered by any Discipline other than His/Her Core Discipline will be treated as GE for Him/Her.

In a single core discipline program, the student shall Major in the core discipline. However, if he/she wishes to Minor in another discipline then he/she has to earn 28 credits from GE courses of the second discipline.

In four years, a student will study the following number of DSCs, DSEs and GEs:
Total DSC papers : 20
Total DSE paper options : 10 (minimum to be chosen is 4)
Total GE paper options : 10 (minimum to be chosen is 4)

The student can **Minor** in another discipline, if he/she fulfills the following criteria:

Seven GEs = Minor
(7 x 4) = 28 credits

Example: A student is enrolled in B.A. (Hons.) History and decides to pursue 4th year (sem VII + sem VIII).

If he successfully completes the 4th year, he/she will be awarded **Major in History**.

In addition, if the student successfully completes, seven GEs in Political Science, he/she will be awarded **Minor in Political Science**.

A.C.-03.08.2022
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UNIVERSITY OF DELHI

B.A. (Hons.) Business Economics

(SEMESTER-I)
based on

Undergraduate Curriculum Framework 2022 (UGCF)

(Effective from Academic Year 2022-23)

University of Delhi

Semester –I

DSCs:-

Course Title	Nature of the Course	Total Credits	Components			Eligibility Criteria/ Prerequisite	Contents of the course and references may be seen at
			L	T	P		
Microeconomics-I	DSC-1	4	3	1	0	Class XII Pass	Annexure – I
Accounting for Managers	DSC-2	4	3	1	0	Class XII Pass	Annexure -II
Mathematics for Business Economics-I	DSC-3	4	3	1	0	Class XII Pass	Annexure -III

GEs:- (Odd Semesters)

Course Title	Nature of the Course	Total Credits	Components			Eligibility Criteria/ Prerequisite	Contents of the course and references may be seen at
			L	T	P		
Principles of Economics	GEC1	4	3	1	0	Class XII Pass	Annexure – IV
Legal Environment of Business	GEC3	4	3	1	0	Class XII Pass	Annexure –V
Quantitative Techniques in Management	GEC5	4	3	1	0	Class XII Pass	Annexure –VI
Economics of Startups	GEC7	4	3	1	0	Class XII Pass	Annexure –VII
International Economics	GEC9	4	3	1	0	Class XII Pass	Annexure –VIII
Economic Policy Framework	GEC11	4	3	1	0	Class XII Pass	Annexure –IX

6.1 List of Courses

DISCIPLINE SPECIFIC CORE COURSES

Code	Semester	Course Name	Credits	Instruction	Evaluation
DSC - 1	I	Microeconomics – I	4	3L +1T	Theory: 75 + IA: 25
DSC - 2	I	Accounting for Managers	4	3L + 1T	Theory: 75 + IA: 25
DSC - 3	I	Mathematics for Business Economics – I	4	3L + 1P	Theory: 50 + Prac: 25 + IA: 25
DSC - 4	II	Macroeconomics – I	4	3L + 1T	Theory: 75 + IA: 25
DSC - 5	II	Financial Institutions and Markets	4	3L + 1T	Theory: 75 + IA: 25
DSC - 6	II	Statistics for Business Economics – I	4	3L + 1P	Theory: 50 + Prac: 25 + IA: 25
DSC - 7	III	Microeconomics – II	4	3L + 1T	Theory: 75 + IA: 25
DSC - 8	III	Mathematics for Business Economics – II	4	3L + 1T	Theory: 75 + IA: 25
DSC - 9	III	Corporate Finance	4	3L + 1T	Theory: 75 + IA: 25
DSC - 10	IV	Macroeconomics – II	4	3L + 1T	Theory: 75 + IA: 25
DSC - 11	IV	Statistics for Business Economics – II	4	3L + 1P	Theory: 50 + Prac: 25 + IA: 25
DSC - 12	IV	Marketing Management	4	3L + 1T	Theory: 75 + IA: 25
DSC - 13	V	Basic Econometrics	4	3L + 1P	Theory: 50 + Prac: 25 + IA: 25
DSC - 14	V	Organisational Behaviour	4	3L + 1T	Theory: 75 + IA: 25
DSC - 15	V	Industrial Economics	4	3L + 1T	Theory: 75 + IA: 25
DSC - 16	VI	Operations Research	4	2L + 2P	Theory: 50 + Prac: 25 + IA: 25
DSC - 17	VI	Legal Aspects of Business	4	3L + 1T	Theory: 75 + IA: 25
DSC - 18	VI	Environmental Economics	4	3L + 1T	Theory: 75 + IA: 25
DSC - 19	VII	Data Science	4	2L+2P	Theory: 50 + Prac: 25 + IA: 25
DSC - 20	VIII	Time Series Econometrics	4	3L + 1P	Theory: 50 + Prac: 25 + IA: 25

DISCIPLINE SPECIFIC ELECTIVE COURSES

Code	Semester	Course Name	Credits	Instruction	Evaluation
DSE - 1	Odd	Income Tax Law and Practice	4	3L+1T	Theory: 75 + IA: 25
DSE - 3	Odd	Entrepreneurship	4	3L+1T	Theory: 75 + IA: 25
DSE - 5	Odd	Investment and portfolio Optimization	4	3L+1T	Theory: 75 + IA: 25
DSE - 7	Odd	Monetary Econnomics	4	3L+1T	Theory: 75 + IA: 25
DSE - 9	Odd	International Economics	4	3L+1T	Theory: 75 + IA: 25
DSE - 11	Odd	Understanding Consumer	4	3L+1T	Theory: 75 + IA: 25
DSE - 13	Odd	Behavioural Finance	4	3L+1T	Theory: 75 + IA: 25
DSE - 15	Odd	Development Economics	4	3L+1T	Theory: 75 + IA: 25
DSE - 17	Odd	Brand Management	4	3L+1T	Theory: 75 + IA: 25
DSE - 19	Odd	Business Valuation	4	3L+1T	Theory: 75 + IA: 25
DSE - 21	Odd	Applied Econometrics	4	3L+1T	Theory: 75 + IA: 25
DSE - 2	Even	Public Finance	4	3L+1T	Theory: 75 + IA: 25
DSE - 4	Even	Advertising Management	4	3L+1T	Theory: 75 + IA: 25
DSE - 6	Even	International Financial Management	4	3L+1T	Theory: 75 + IA: 25
DSE - 8	Even	Behavioural Economics	4	3L+1T	Theory: 75 + IA: 25
DSE - 10	Even	Indian Economy	4	3L+1T	Theory: 75 + IA: 25
DSE - 12	Even	Research Methodology	4	3L+1T	Theory: 75 + IA: 25
DSE - 14	Even	Financial Risk Management	4	3L+1P	Theory: 50 + Prac: 25 + IA: 25
DSE - 16	Even	Marketing Analytics	4	3L+1T	Theory: 75 + IA: 25
DSE - 18	Even	Business Tax Planning	4	3L+1T	Theory: 75 + IA: 25
DSE - 20	Even	Strategic Management	4	3L+1T	Theory: 75 + IA: 25

6.2. List of Courses for students enrolled in other Honours programs

GENERIC ELECTIVE COURSES

Code	Semester	Course Name	Credits	Instruction	Evaluation
GEC-1	Odd	Principles of Micro-Economics	4	3L+1T	Theory: 75 + IA: 25
GEC-2	Even	Principles of Macro-Economics	4	3L+1T	Theory: 75 + IA: 25
GEC-3	Odd	Legal Environment of Business	4	3L+1T	Theory: 75 + IA: 25
GEC-4	Even	Statistics for Business	4	3L+1P	Theory: 50 + Prac: 25 + IA: 25
GEC-5	Odd	Quantitative Techniques in Management	4	3L+1T	Theory: 75 + IA: 25
GEC-6	Even	Introduction to Finance	4	3L+1T	Theory: 75 + IA: 25
GEC-7	Odd	Economics of Startups	4	3L+1T	Theory: 75 + IA: 25
GEC-8	Even	Environmental Economics and Climate Change	4	3L+1T	Theory: 75 + IA: 25
GEC-9	Odd	International Economics	4	3L+1T	Theory: 75 + IA: 25
GEC-10	Even	Indian Financial System	4	3L+1T	Theory: 75 + IA: 25
GEC-11	Odd	Economic Policy Framework	4	3L+1T	Theory: 75 + IA: 25
GEC-12	Even	Basic Econometrics	4	3L+1P	Theory: 50 + Prac: 25 + IA: 25

6.3 Skill Outcome/Competency Mapping of Courses

DISCIPLINE SPECIFIC CORE COURSES

	Discipline Specific knowledge	Research acumen	Information/ digital literacy	Communication Skills	Critical thinking & Reasoning Skills	Problem solving	Cooperation/ Team work	Leadership qualities	Ethical/Social and Environmental awareness	Analytical Skills
Microeconomics - 1	✔	✔			✔					✔
Accounting for Managers	✔				✔	✔		✔		✔
Mathematics for Business Economics-I	✔	✔	✔		✔	✔				✔
Macroeconomics - 1	✔	✔			✔					
Financial Institutions and Markets	✔				✔				✔	
Statistics for Business Economics-I	✔	✔	✔		✔	✔				✔
Micro Economics -II	✔	✔			✔					✔
Mathematics for Business Economics - II	✔	✔	✔		✔	✔				✔
Corporate Finance	✔			✔	✔		✔	✔		✔
Macroeconomics - II	✔	✔			✔					✔
Statistics for Business Economics-II	✔	✔	✔		✔	✔				✔
Marketing Management	✔			✔			✔	✔	✔	
Basic Econometrics	✔	✔	✔		✔	✔				✔
Organisational Behaviour	✔	✔		✔			✔	✔	✔	✔
Industrial Economics	✔	✔							✔	
Applied Econometrics	✔	✔	✔		✔	✔				✔
Legal Aspects of Business	✔	✔		✔	✔	✔	✔	✔	✔	✔
Environmental Economics	✔			✔	✔				✔	
Data Science	✔	✔	✔	✔	✔	✔				✔
Operations Research	✔	✔	✔		✔	✔				✔

DISCIPLINE SPECIFIC ELECTIVE COURSES

	Discipline Specific knowledge	Research acumen	Information/ Digital literacy	Communication Skills	Critical thinking & Reasoning Skills	Problem solving	Cooperation/ Team work	Leadership qualities	Ethical/ Social and Environmental awareness	Analytical Skills
Security Analysis and Portfolio Management	✔	✔			✔	✔				✔
Behavioural Finance	✔	✔			✔					
Topics in Microeconomics	✔	✔			✔					
Monetary Economics	✔	✔							✔	
International Economics	✔	✔								✔
Development Economics	✔	✔							✔	
Consumer Behaviour	✔	✔		✔	✔		✔	✔		
Brand Management	✔	✔		✔	✔		✔	✔	✔	
Income Tax Law and Practice	✔								✔	
Entrepreneurship	✔	✔	✔	✔	✔		✔	✔	✔	
Business Valuation	✔	✔						✔	✔	
Times Series Econometrics	✔	✔	✔	✔	✔	✔				✔
International Financial Management	✔		✔	✔	✔			✔		
Financial Risk Management	✔	✔	✔	✔	✔			✔		✔
Topics in Macroeconomics	✔	✔			✔					✔
Public Finance	✔	✔			✔					✔
Behavioural Economics	✔									✔
Indian Economy	✔	✔		✔	✔				✔	
Marketing Analytics	✔	✔	✔	✔	✔		✔	✔		✔
Advertising Management	✔			✔			✔	✔		
Business Tax Planning	✔				✔			✔	✔	✔
Strategic Management	✔			✔				✔		
Research Methodology		✔	✔	✔	✔		✔	✔	✔	✔

Annexure-1

Based on Undergraduate Curriculum Framework 2022

UNIVERSITY OF DELHI

UNDERGRADUATE PROGRAMMES OF STUDY

STRUCTURE, COURSES & SYLLABI OF SEMESTER VIII

SEMESTER -I

B.A. (HONOURS) BUSINESS ECONOMICS

B.A. (HONS.) BUSINESS ECONOMICS

Category-I

DSC - 1: Microeconomics – I

Course Title	Total Credits	Components			Eligibility Criteria	Prerequisite if any
		L	T	P		
Microeconomics-I	4	3	1	0	Class XII Pass	NIL

DSC - 1: Microeconomics – I

Objectives

This is the first course in a group of two that together cover the basic concepts of Microeconomics. This course covers the areas of consumer demand, production, cost and different types of commodity markets. It introduces the concept of economics, market equilibrium, elasticity, and consumer and producer behaviour at the basic level. It is a core foundation paper giving the students a micro aspect of different economic activities.

Learning Outcomes

- To analyse the market behaviour by understanding the basic concepts of microeconomics.
- To provide students with an understanding of the standard theoretical analysis of consumer and producer behaviour.
- To know the applications of theory of production and cost structure

Course Structure

Unit 1: Basic Concepts (8 hours)

Scope and method of microeconomics; Scarcity and Choice; Positive and normative economics; Production possibility frontier, concepts of opportunity cost, rate of growth; Demand, Supply and Market equilibrium; Market Failure: Public goods and externalities; types of externalities – production and consumption externalities, asymmetric information and moral hazard: principal agent problem.

Unit 2: Theory of Consumer Behaviour (20 hours)

Elasticity: Price elasticity of demand, price elasticity of supply, cross elasticity and income elasticity of demand; Preference; utility; budget constraint; Cardinal theory & Ordinal theory: Budget sets and Preferences under different situations; Utility; Indifference curves: Consumer equilibrium; utility maximization; Engels curve, Derivation of demand curve, Income and substitution effects: Hicks and Slutsky equation; inferior, normal and Giffen goods Applications of indifference curves to other economic problems; Revealed preference theory; revealed preference: weak axiom, compensated law of demand; consumer surplus, equivalent variation and compensating variation, WARP, SARP.

Unit 3: Choice under Uncertainty (10 hours)

Choice under uncertainty – Comparative statics, utility function and expected utility, measures of risk, risk aversion and risk preference; intertemporal choice: savings and borrowing; Duality in consumption.

Unit 4: Technology, Production and Cost (30 hours)

Technology; isoquants; production functions with one and more variable inputs; returns to scale; Law of variable proportion, total, average and marginal product, marginal rate of technical substitution, iso-cost line and firm‘s equilibrium, elasticity of substitution; cost minimization; expansion path, short run and long run costs; various cost curves in the short run and long run and its relation; economies of scale; increasing and decreasing cost industries; envelope curve; economies of scale. Prices as parameters: Firm equilibrium and profit; short and long-run supply function; taxes and subsidies.

References

Essential

1. McConnell et al. (2021). Microeconomics. McGraw-Hill Education.
2. Varian, H.R. (2020). Intermediate Microeconomics: A modern approach. W. W. Norton.
3. Bernheim, B. and Whinston, M. (2009). Microeconomics. Tata McGraw- Hill.

Additional

1. Hall, Robert E. and Lieberman, Marc (2009). Microeconomics - Principles and Applications. South Western Educational Publishing.
2. Snyder, C., Nicholson, W. (2010). Fundamentals of Microeconomics. Cengage Learning.
3. Pindyck, Robert, Rubinfeld, Daniel (2017). Microeconomics (Eighth Edition). Pearson

Teaching - Learning Process

3 Lectures and 1 tutorial each week.

Assignments, Term Paper, Presentations, Project, Classroom discussions

Assessment Method

Total Marks: 100

Practical: 0

Internal Assessment: 25 Marks

End Semester Exam: Duration: 3 Hours & Maximum Marks: 75

Keywords

Demand, Supply, Elasticity, Market failure, Externalities, Consumer Preference, Production, Cost

DSC - 2: Accounting for Managers

Course Title	Total Credits	Components			Eligibility Criteria	Prerequisite if any
		L	T	P		
Accounting for Managers	4	3	1	0	Class XII Pass	NIL

DSC - 2: Accounting for Managers

Course Objectives

The course imparts knowledge of accounting principles particularly in the context of the preparation of financial statements and cost information of a business entity. The course concerns analysis and interpretation of these statements and their applications to managerial decision- making.

Learning Outcomes

· To understand the process of financial, cost and management accounting.

· To make a critical analysis of the financial statements of a business entity.

· To identify the steps for rational managerial decision making with respect to financial and cost aspects of a business.

Course Structure

Unit 1: Financial Accounting (16 hours)

Meaning of Financial Accounting, Functions and Limitations of Financial Accounting, Users of Financial Accounting Information, Basis of Accounting: Cash and Accrual. Principles of Financial Accounting (GAAP), Overview of International Financial Reporting Standards (IFRS) and Ind AS.

Overview of Process of Financial Accounting: Journalizing, Ledger Posting and Preparation of Trial Balance.

Preparation of final Accounts (with adjustments) of a Sole Proprietor: Trading and Profit and Loss Account and Balance Sheet.

Understanding the Financial Statements of a Joint Stock Company: Format of Income Statement and Position Statement as per revised schedule VI of Companies Act, 2013.

Unit 2: Analysis and Interpretation of Financial Statements (12 hours)

Financial Statements: Meaning and types, importance and limitations of Financial Analysis

Techniques of Analysis: Cash Flow Statement (Indirect Method as per Revised AS 3): Preparation, Utility and Limitations.

Ratio Analysis with emphasis on the purpose and interpretation of the ratios: Liquidity, Turnover, Profitability and Solvency Ratios. Advantages and Limitations of Ratio Analysis.

Unit 3: Cost and Management Accounting (20 hours)

Cost and Management Accounting: Meaning, Functions, Utility and Limitations, Financial Accounting vs Cost Accounting, Financial Accounting vs Management Accounting, Tools of Management Accounting, Methods of Costing, Techniques of Costing, Basic Cost Concepts, Classification of Costs, Absorption Vs Marginal Costing.

Unit Costing: Preparation of Cost Sheet and computation of profits.

Cost Volume Profit Analysis, Break-even Analysis, Margin of Safety.

Managerial Decisions involving Alternate Choices: fixing the selling price, exploring new markets, make or buy decision, product/ sales mix decision (with and without key factor), shut down or continue.

Unit 4: Planning and Control (12 hours)

Meaning of Standard Costing, process of determination of Standard Costs.

Meaning of Budget and Budgetary Control, Benefits and Limitations of Budgetary Control, Classification of Budgets, Preparation of Master Budget, Fixed and Flexible Budgets, Difference between Standard and Budgeted Costs.

Variance Analysis: Cost Variances: problems related to Material and Labour Variances.

References:

Essential

1. Arora, M.N. Accounting For Management. Himalaya Publishing House
2. Lal, J. Accounting For Management. Himalaya Publishing House (P) Ltd.
3. Maheshwari, S.N. Accounting for Management. Vikas Publishing House.
4. Sahoo, B.P. Accounting for Managers. Wisdom Publications.

Additional

1. Gupta, R.L. Introductory Corporate Accounting. Sultan Chand & Sons.
2. Horngren, C.T., Sundem,G.L., Burgstahler, D. Schatzberg, J.O. Introduction to Management Accounting. Pearson.
3. Monga, J.R. Financial Accounting Concepts and Applications. Mayur Paperbacks.

4. Monga, J.R. Basic Corporate Accounting. Mayur Paperback.
5. Rustagi, R.P. Fundamentals of Management Accounting. Taxmann.
6. Singh, S. Management Accounting. PHl Learning
7. Stice, J. & Stice, E.K. Financial Accounting Reporting and Analysis. Cengage Learning

Teaching - Learning Process

3 Lectures and 1 tutorial each week.

Emphasis on interpretation and applications of accounting methods and techniques for taking managerial decisions. Assignments, Term Paper, Presentations, Project, Classroom discussions

Assessment Method

Total Marks: 100

Practical: 0

Internal Assessment: 25

End Semester Exam: Duration: 3 Hours & Maximum Marks: 75

Key Words

Financial Accounting, Final Accounts, Management Accounting, Cost Accounting, Cost Sheet, Cost Volume Profit Analysis, Variance Analysis.

DSC - 3: Mathematics for Business Economics – I

Course Title	Total Credits	Components			Eligibility Criteria	Prerequisite if any
		L	T	P		
Mathematics for Business Economics-I	4	3	0	1	Class XII Pass	NIL

DSC - 3: Mathematics for Business Economics - I

Course Objectives

The objective of this course is to provide instruction on basic mathematics that enables the study of economic theory and business applications at the undergraduate level. This shall be required for the teaching of the courses on microeconomic theory, macroeconomic theory, statistics, and econometrics set out in this syllabus. This course introduces mathematical techniques that will be new to most students through examples of their application to economic concepts. The economic and business models are a means for illustrating the method of applying mathematical techniques to economic theory and business applications in general. Mathematics has become the language of

modern analytical economics and it quantifies the relationship between economic variables and among economic actors.

Learning Outcomes

- To build the mathematical base necessary for other courses and to understand the basic functional forms used in economic analysis.
- To develop the mathematical knowledge required in business decision-making and to study the mathematics in which economic theories are expressed.
- To make and refute arguments by developing mathematical understanding.

Course Structure

Unit 1: Introduction (9 hours)

Algebra concepts, number systems, inequalities, mathematical logic, proof techniques; sets and set operations; functions and their properties.

Unit 2: Univariate Analysis (16 hours)

Curves and graphs; elementary functions: linear, quadratic, polynomial, power, exponential, logarithmic; sequences and series: convergence, algebraic properties and applications; Continuous functions: characterisations, properties with respect to various operations and applications; Differentiable functions: characterisations, properties with respect to various operations and applications; Second and higher order derivatives: properties and applications. Geometric properties of functions: convex functions, their characterisations and applications; local and global optima: geometric and calculus-based characterisations, and applications.

Unit 3: Linear Algebra (12 hours)

Linear Algebra: Vector spaces: algebraic and geometric properties, scalar products, norms, orthogonality; linear transformations: properties, matrix representations and elementary operations; systems of linear equations: properties of their solution sets; determinants: characterization, properties and applications. Eigenvalues and eigenvectors, diagonalization, Spectral Theorem.

Unit 4: Integration (8 hours)

Integrals: indefinite and definite. Methods of integration. Economic applications.

Readings

Essential

1. Sydsaeter, K., Hammond, P. (2002). Mathematics for Economic Analysis. Pearson Education.

Additional

1. Chiang, Alpha C., and Wainwright, K.(2005). Fundamental Methods of Mathematical Economics. Boston, Mass: McGraw-Hill/Irwin.

2. Hoy, Michael, Livernois John, McKenna Chris, Ray Rees, and Thanasis Stengos. (©2011) Mathematics for Economics. Cambridge, Mass. : MIT Press
3. Lay, David C., Judi J. McDonald, Steven R. Lay.(2022). Linear Algebra and Its Applications. Pearson.

Practical : 30 Hours

Teaching - Learning Process

3 Lectures and 1 practical each week.

Assignments, Tests, Presentations, Classroom discussions.

Spreadsheet Software for logical and other functions. Problem solving.

Assessment Methods

Total Marks: 100

Practical: 25

Internal Assessment: 25 Marks

End Semester Exam: Duration: 3 Hours & Maximum Marks: 50

Key Words

Set theory, Univariate, Limits, Continuity, Optimisation, Calculus, Differentiation, Concavity, Convexity, Optimisation, Spreadsheet

B.A. Honours Business Economics
Generic Elective Courses
GE-1: Principles of Microeconomics

Course Title and Code	Credits	Credit distribution of the course			Eligibility Criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/Practice		
Principles of Microeconomics	**4**	**3**	**1**	**0**	**Class XII**	**None**

Learning Objectives

This course aims to:
(i) develop a theoretical understanding of strategic behaviour of economic agents and functioning of a market economy through demand and supply
(ii) offer understanding of the basic principles of micro economics like problem of scarcity and choice, elasticity, optimisation of resources
(iii) introduce students with concepts of consumer theory, production and cost, analysis of individual choices
(iv) equilibrium outcomes and how they are determined by changing market and social conditions
(v) impart sufficient examples based on real economy from both local and global perspective.
(vi) offer sound knowledge and skill to use the managerial economics concepts and techniques for effective management planning, evaluating performance and making decisions.

Learning Outcomes
By studying this course, students will be able to:
(i) to assess the economic analysis method, with reference to cost-benefit analysis of private and public actions.
(ii) compare and contrast production and cost in short run and long run
(iii) to identify and evaluate various models of different markets, and the price and output decisions for maximizing profit
(iv) understand the links between household and firm behavior and the economic models of demand.
(v) use the microeconomic theory and principles to current issues and evaluate related public policy initiatives and response

Unit I: - Introductory concepts and methods **[8 hours]**

Scope of Economics, Three principles: optimization, equilibrium and evidence. Markets, Demand and supply curves: individual and aggregate and shifts.

Unit: II : Foundations of Microeconomics **[12 hours]**

Preferences, price and income changes and the demand curve; consumer surplus and elasticities.
Production, cost curves and revenue curves. Supply curve and its elasticity; long and the short run; producer surplus. Competitive equilibrium, entry and exit; economic and accounting profit.
Perfect competition and pareto efficiency; resource allocation; deadweight loss; equity and efficiency.

Unit III: Trade, Externalities and Factor Markets **[12 hours]**

Production possibility curve and opportunity cost. Basis of trade: absolute and comparative advantage. Trade between states and between countries. Arguments against free trade.
Externalities positive and negative; private solutions and government solutions. Public goods and common goods.
Markets for factors of production; labour, physical capital and land. The supply of labour and wage inequality.

Unit IV : Market Structure **[13 hours]**

Sources of market power. The monopolist: revenue curves, optimal quantity and price. Price discrimination and government policy towards monopoly.
Oligopoly models with homogenous and non-homogenous products. Monopolistic competition: short run and long run equilibrium.

Essential Readings

Acemoglu Daron, David Laibson, List John, Microeconomics, Pearson 2019

Additional Readings

Core Econ Team, The Economy 1.0 and The Economy 2.0, www.core-econ.org

Case, K.E., Fair, R.C., Sharon O., Principles of Economics, Pearson

GENERIC ELECTIVES (GE-3): LEGAL ENVIRONMENT OF BUSINESS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Legal Environment of Business (GEC 3)	4	3	1	0	Class 12	None

Learning Objectives

The course intends:

- To familiarize the student with the concept and essentials of Indian Contract act which govern business for its efficient conduct and to apply them in real life situations.
- To explain the meaning, nature and incorporation of a company.
- To make students understand and apply the provisions of Sale of Goods Act and Consumer Protection Act.
- To recognize and articulate legal principles related to Limited Liability Partnership and Information Technology Act.

Learning outcomes

By studying this course, students will be able to:

- To understand the basic rules and provisions of Contract and Agreements.
- To know the provisions to Formation and functioning of company and LLP.
- To understand the significance and role of law of sale of goods act
- To have in- depth knowledge of Information Technology Act And legal framework of right to Privacy, Data Security and Data Protection.
- Apply the law correctly to different facts and in different contexts

SYLLABUS OF GEC-3

Unit 1: Indian Contract Act **(12 hours)**

Meaning and Essentials of a Contract; Valid, Void and Voidable Contract; Offer and Acceptance; Consideration; Capacity of Parties; Free Consent; Discharge of Contract and Remedies for Breach of a Contract.

Unit 2: Companies Act **(12 hours)**

Meaning and Nature of Company; Promotion and Incorporation of a Company; Memorandum of Association; Articles of Association; Misleading Prospectus and

remedies available to the parties; Board of Directors and their qualification, duties, powers. Company Meetings and Resolutions.

Unit 3: Sale of Goods Act and Consumer Protection Act (12 hours)

Essentials of a Contract of Sale; Sale and Agreement to Sell, Conditions and Warranties; Transfer of Title by Non-Owners; Doctrine of Caveat Emptor; Rights of Unpaid Seller.**Consumer Protection Act 2009**: Scope and Applicability of the Act. Rights of consumer. Procedure for complaints. Duties and power of Central Consumer Protection Authority.

Unit 4: Limited Liability Partnership Act and IT Act (9 hours)

Meaning and nature of LLP; LLP and Company; LLP Agreement, Partners and Designated Partners, Incorporation of LLP; Partners and their Relations, Extent and limitation of liability of LLP.

Information Technology Act 2000: Concept and role; Digital signature, Electronic governance, Attribution, Acknowledgement and dispatch of electronic records, Regulation of certifying authorities, Digital signatures certificates, Duties of subscribers, Penalties and adjudication, Appellate Tribunal , Offences.

Essential/recommended readings

1. Bansal, V & Arora, A. Corporate Laws. Vikas Publishing, House (P) Ltd. New Delhi.
2. Kuchhal M.C & Vivek K. Business Legislation for Management. VIKAS Publishing House (P) Ltd.
3. Kumar, A. Corporate Laws. International Book House (P) Ltd.
4. Bare Acts relating to the laws.

Suggestive readings

1. Chadha, R,. Chadha, S. Corporate Laws. Mayur Paperbacks. New Delhi.
2. Maheshwari & Maheshwari. Business Law. National Publishing House. New Delhi.
3. Singh, Avtar. The Principles of Mercantile Law. Eastern Book Company. Lucknow.
4. Tulsian, P.C. Business Law. Tata McGraw Hill. New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5): QUANTITATIVE TECHNIQUES IN

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Quantitative Techniques in Management (GEC 5)	4	3	1	0	Class 12	None

Learning Objectives

To apprise students:

- To understand the concepts, formulation and interpretation of linear programming methods and its application in diverse problems.
- To formulate and solve Transportation and Assignment problems
- To understand basic concept, construction of the Network diagram and Critical Path Analysis
- To introduce game theory and network analysis forms part of the course.

Learning outcomes

By studying this course, students will be able to:

- Identify and develop operational research models from the verbal description of the real system.
- Understand the mathematical tools that are needed to solve optimization problems.
- Develop critical thinking and use PERT and CPM techniques to improve decision making.

SYLLABUS OF GEC-5

UNIT – I: Introduction - Operations Research, Linear Programming (15 hours)

(i) Introduction to Operations Research, characteristics, Phases, Methodology, Applications and scope

(ii) Formulation of Linear Programming problems, Graphical Solutions (Special cases: Multiple optimal solution, infeasibility, unbounded solution); Simplex Method, Special cases, Big-M method and Two-phase method; Duality (emphasis on formulation & economic interpretation); Sensitivity Analysis. (Excel Solver application)

UNIT – II:Transportation and Assignment Problem (12 hours)

(i) Transportation Problem: Formulation, Solution by N.W. Corner Rule, Least Cost method, Vogel's Approximation Method (VAM), Modified Distribution Method; Special cases: Multiple Solutions, Maximization case, unbalanced case, prohibited routes.

(ii) Assignment Problem: Hungarian Method, Special cases: Multiple Solutions, Maximization case, Unbalanced case, Restrictions on assignment.

UNIT – III: Network Analysis (9 hours)

Basic Concept, Construction of the Network diagram, Critical Path Analysis, float and slack analysis (Total float, free float, independent float), probability consideration in PERT (Interface with Project Management open-source software)

UNIT – IV: Decision Theory (9 hours)

Decision making environment, Construction of Pay off Table, Opportunity Loss Table, Decision under uncertainty. Decision under Conflict: Game Theory, Two-person Zero-Sum games, Maximin Minimax Principle, Games without Saddle point - Mixed strategy, Dominance Rule.

Essential/recommended readings

1. Vohra, N.D., Quantitative Techniques in Management (5th ed.). Tata McGraw Hill
2. Swarup, K., Gupta, P.K. and Mohan, Man, Introduction to Management Science Operations Research (19th ed.). Sultan Chand & Sons.
3. Sharma, J.K., Operations Research: Theory and Applications (6th ed.). Trinity.
4. Taha, H.A., Operations Research: An Introduction (9th ed.). Pearson.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-7): ECONOMICS OF STARTUPS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Economics of Startups (GEC 7)	4	3	1	0	Class 12	None

Learning Objectives

To apprise students:

- To give an overview of startups and its types that would help students to understand basics of starting up new ventures.
- To build and create a successful Business Plan
- To understand various Business models and learn startups
- To familiarize with central and state level institutions supporting small business entreprises.

Learning outcomes

By studying this course, students will be able to:

. · Understand the process and working of a startup.

· Identify the different ways in which entrepreneurs manifest in start-ups.

· Know how to create one's own business venture and the various factors that influence successful set-up and sustainable operations.

· Explore the funding and other institutions supporting small business units.

SYLLABUS OF GEC-7

UNIT – I: Startup, Generation & Experimentation (9 hours)

Concept of Startup, Role of digital technologies, Startup ecosystems, the startup movement in India; Generating a value proposition, how valuable are new ideas, Design thinking principles; Experimenting with the prototype, Introduction to lean start-ups, Lean startup principles, Learning and failing fast.

UNIT – II: Building the Business Plan (15 hours)

Beginning Considerations: Building a competitive advantage. The strategic management processes. Conducting a feasibility analysis. Forms of Business ownership. Franchising and entrepreneurship. Buying an existing business, marketing and financial considerations: Building a powerful marketing plan. E-commerce and Entrepreneur. Pricing strategies. Creating a successful financial plan. Choosing the right location and layout.

UNIT – III: Crafting business models and Lean Start-ups (12 hours)

Introduction to business models; Creating value propositions-conventional industry logic, value innovation logic; customer focused innovation; building and analysing business models; Business model canvas, Business Pitching.

UNIT – IV: Institutions Supporting Small Business Enterprises and Ethics(9 hours)

Central level institutions. State level institutions. Other agencies. Industry Associations. Class exercise- discussions on current government schemes supporting entrepreneurship and finding out which scheme will most suit the business plan devised by the student. Importance of Ethical Entrepreneurship, value of ethics to an entrepreneur.

Essential/recommended readings

1. Scarborough, N. M., Cornwall, J. R., & Zimmerer, T. (2016). Essentials of entrepreneurship and small business management. Boston. Pearson Publications.
2. Hisrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A., Entrepreneurship, Tata McGraw Hill.
3. Shukla, M.B., Entrepreneurship and Small Business Management. Kitab Mahal Publishers.

Suggestive readings

1. Hishrich, R.D. and Peters, M. Entrepreneurship. Irwin Publications.
2. Barringer, B.R. and Ireland, R. Duane. Entrepreneurship: Successfully launching new ventures. (6th Edition) Pearson
3. Kuratko, D.F., and Rao, T.V., Entrepreneurship: A South-Asian Perspective. Cengage Publications.
4. Shankar, R., Entrepreneurship: Theory and Practice. Tata McGraw Hill.
5. Kathleen, R Allen. Launching New Ventures: An Entrepreneurial Approach. Cengage Learning.
6. Fisher, Steve and Duane, Ja-Nae. The Startup Equation - A Visual Guidebook for Building Your Startup. Mc Graw Hill Education India Pvt. Ltd.

Note: **Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

REGISTRAR

GENERIC ELECTIVES (GE-9): INTERNATIONAL ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
International Economics (GE9)	**4**	**3**	**1**	**0**	**Class XII**	**NA**

Learning Objectives

This course aims at inculcating:

- Basic understanding of fundamentals of international Trade
- An overview of theories of international trade
- Understand the meaning of Balance of Payment and explore the reasons of disequilibrium.
- Determine exchange rates and understand global capital market

Learning outcomes

By studying this course, students will be able to:

- To understand basic concept and origin of International economics through the prism of classical and new classical trade theories
- To understand different terms of trade and their applicability
- To differentiate between Modern and Classical Trade theories.
- To gain knowledge about the foreign exchange markets and its working
- To learn about global capital market

SYLLABUS OF GE-9

UNIT – I: Introduction to International Trade [12hours]

Globalization and its growing importance in the world economy; Impact of globalization; International business contrasted with domestic businesses; Cost and benefit analysis of tariff, Effective rate of protection and welfare arguments of tariff and developing countries. Foreign direct investment (FDI) in world economy: Trends, Direction, and flow of FDI; Theories of FDI; Political ideology and FDI.

Unit 2: International Trade Theory [15hours]

World Trade: An overview; Theories of international trade – Mercantilism; Absolute advantage theory, Comparative advantage theory, Factory proportion theory and Leontief paradox, Product life cycle theory, New trade theory, National competitive advantage:

Porter's diamond. International Business Environment: Economic, Demographic, Cultural and Political-legal environment.

Unit 3: Balance of Payment (BoP) [6hours]

Balance of Payment: Meaning, Components (Current, Capital and Official reserve), Reasons for disequilibrium in BoP, Measures to correct disequilibrium, Understanding India's BoP and comparing it with markets like USA and China.

Unit 4: Foreign Exchange and Global Capital Market [12hours]

Exchange Rate Determination: Currency Demand and Supply Curves, Factors Affecting Exchange Rate, Global Capital Market: Introduction, Benefits of global capital market, Growth of global capital market, Global capital market risk, Eurocurrency market, Global bond market, Global equity market, Exchange rate risk, Managing exchange rate risk, Methods of Financing International Trade.

Essential/recommended readings

1. Hill, C. (2021). International business: Competing in the global market place (13th Edition). *Strategic Direction*.

2. Krugman, P. R., & Obstfeld, M. (2009). International economics: Theory and policy. Pearson Education.

3. Levi, M.D. (2009). *International Finance* (5th Edition), Taylor and Francis Ltd.

4. Madura, J. (2020). *International financial management*. Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-11): ECONOMIC POLICY FRAMEWORK

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Economic Policy Framework (GE11)	4	3	1	0	Class 12	None

Learning Objectives

This course will help students

- to understand the importance, meaning and objective of macroeconomic policies
- to understand role and effect of fiscal policy and government expenditure
- to explore role of monetary policy and banking sector in India
- to analyse efficacy of fiscal/monetary policy under fixed and flexible exchange rate

Learning outcomes

By studying this course, students will be able to:

. · Learn the basic concept of macroeconomics

· Understand how different parameters of macroeconomics work under Indian economy.

· Understand how monetary and fiscal policy works.

· Know different exchange rate regimes.

SYLLABUS OF GE-11

UNIT – I: Meaning and objectives of economic policy (8 hours)

Tools and goals (objectives and instruments of policy) Circular flow of income (start with a two sector model and go up to a five sector model); National Income aggregates and the related concepts of national income; input-output table to calculate national income using the income, expenditure and the value added methods.

Unit 2: Fiscal policy (15 hours)

Objectives and meaning; effect of fiscal policy - role of tax policy (T) and government expenditure (G), Aggregate Demand, Meaning of the multiplier. Government expenditure multiplier and balanced budget multiplier Budget –meaning and purpose – example of India's latest Budget (and various heads). Meaning of fiscal, revenue and primary deficits.

Unit 3: Monetary policy (12 hours)

Meaning and objectives; money and credit – credit creation and instruments of credit control; Inflation targeting, Banking in India – structure, recent developments; issues of NPAs and how to resolve it.

Unit 4: Exchange rate policy **(10 hours)**

Structure of BOP; meaning of current account deficit and trade deficit; exchange rate definition (real and nominal); fixed vs flexible exchange rate, efficacy of fiscal/monetary policy under fixed and flexible exchange rate , effect of a change in exchange rate on the current account (imports and exports); structure of capital account and role of capital outflows and inflows.

Essential/recommended readings

1Gupta G.S (2016), Macroeconomics - Theory and Applications (4th edition). McGraw Hill,

2. Shapiro, Edward (1982), Macroeconomic Theory, 5th edition

3. Mankiw, Gregory N. (2010), Macroeconomics (7th edition), Worth Publishers.

4. Sikdar, Soumyen (2011), Principles of Macroeconomics, Oxford University Press

5. Krugman, P.R., Obstfeld, M. and Melitz, M. (2015). International Economics: Theory and Policy, Pearson Education Limited.

6. Dua, P. (2020). Monetary Policy Framework in India, Indian Economic Review, 55(1), June 2020, pp. 117-154.

9. http://www.inclusivejournal.in/about.html.

10. Sengupta, R. and Vardhan, H., Non-Performing Assets in Indian Banks, Economic and Political Weekly, 52(12) March 25, 2017, Money, Banking and Finance Special.

11. Economic Survey, India, latest issue

12. Union Budget Statement, India, Latest issue

Suggestive readings

1Abel, Andrew, Bernanke, Ben and Croushore, Dean (2011). Macroeconomics (7th edition). Pearson

2. Ghate, C., & Kletzer, K. M. (eds.) (2016). Monetary policy in India: A modern macroeconomic perspective. Springer.

3. Kaul, Vivek (2020) Bad Money: Inside the NPA Mess and how it threatens the Indian Banking System, Harper Collins Publisher India.

4. Chhibber, Ajay and Anees, Salman Soz (2021) India's Financial Sector: A Whodunnit. In Unshackling India. Haper Collins Publishers India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Annexure-1

Based on Undergraduate Curriculum Framework 2022

UNIVERSITY OF DELHI

UNDERGRADUATE PROGRAMMES OF STUDY

STRUCTURE, COURSES & SYLLABI OF SEMESTER VIII

SEMESTER -II

B.A. (HONOURS) BUSINESS ECONOMICS

UNIVERSITY OF DELHI

CNC-II/093/1(23)/2022-23/452
Dated: 03.03.2023

N O T I F I C A T I O N

Sub: Amendment to Ordinance V

[E.C Resolution No. 38-1/ (38-1-8) dated 08.12.2022]

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

Syllabi of Semester-II of the Department of Finance & Business Economics under Faculty of Applied Social Sciences & Humanities based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

CATEGORY-I
Business Economics Course for Undergraduate Programme of study with Business Economics as a Single Core Discipline
(B.A. Honours in Business Economics in three years)

DISCIPLINE SPECIFIC CORE COURSE – 4: MACROECONOMICS-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Macroeconomics – I DSC-4	4	3	1	0	Class XII	Nil

Learning Objectives

This course aims at inculcating basic understanding of the fundamentals of macroeconomics. It will enable students to identify major macroeconomic issues, their applicability to the real economy.

Learning outcomes

By studying this course, the students will be able to:

- To understand the basic concept of circular flow of income in four sector economies and different approaches to measurement of National Income.
- To introduce basic concepts of the money market including demand and supply aspects of money.

- To apply the closed economy Hicks- Hansen (IS-LM) model for effectiveness of Fiscal and Monetary policies in the short run.
- To identify macroeconomic issues of developing countries in a global macro setting and its difference from issues of developed countries.

SYLLABUS OF DSC-4

UNIT–I: Introduction to Macroeconomics and National Income Accounting (6 Hours)

Origin of macroeconomics; Income, expenditure and the circular flow in three and four sectoral economies; real versus nominal GDP; price indices; measurements of gross domestic product; national income accounting for closed economy and for open economy and National Income Identity; balance of payments accounts and its components.

UNIT – II: Theory of Income Determination (9 Hours)

An introduction to Classical and Keynesian systems; Simple Keynesian Theory of Income Determination, Consumption function – MPC and APC, changes in equilibrium, Paradox of Thrift and Investment multiplier.

UNIT – III: Money, Interest and Monetary Policy (12 Hours)

Meaning and nature of money, Primary and secondary functions of money; Quantity Theory of Money–Cambridge version, Classical theory of interest rate, Loanable fund Theory and Keynesian Theory of Liquidity Preference and interest rate, Liquidity Trap; Credit Creation and Money Multiplier Determination of money supply and demand; credit creation; money multiplier, monetary base; tools of monetary policy

UNIT – IV:IS-LM Analysis and Aggregate Demand (12 Hours)

Goods market and money market, graphical derivations of the Hicks-Henson model (IS and LM functions); Properties of IS-LM curves, factors affecting the position and slope of IS-LM curves, determination of equilibrium income and interest rates; Studying the impact of fiscal and monetary policies using IS-LM framework;Macro policy in a global setting and developing countries

Unit V: Inflation (6 Hours)

Inflation: meaning; demand and supply side factors; natural rate theory; monetary policy-output and inflation (monetarist view); Phillips curve: short run and long run.

Essential/recommended readings

1. Abel Andrew B., Bernanke Ben and Croushore Dean (2011). Macroeconomics (7th edition). Pearson
2. Schiller Bradley R. and Gebhardt Karen (2019) Macro economy Today (14th edition), McGraw Hill
3. Froyen Richard T. (2013). Macroeconomics: Theories and Policies (10th ed.), Pearson.

4. Blanchard O. (2017). Macroeconomics (7th edition). Pearson
5. Dornbusch R., FischerS., and Startz R. Macroeconomics (11th edition). McGraw-Hill
6. Colander David C. (2017) Macroeconomics (9th edition), McGraw Hill

Suggested readings

1. Gordwin, Harris, Nelson, Roach and Torris (2017) Macroeconomics in context (2nd edition), Routledge Taylor and Francis Pub Indian Edition
2. Government of India (GOI) (Latest Year), Economic Survey, Ministry of Finance New Delhi.
3. Government of India (GOI) (Latest Year), Handbook of Indian Economy, RBI Publication New Delhi.
4. Mankiw N. Gregory,Macroeconomics, Worth Publishers.
5. Chugh, S. (2015) Modern Macroeconomics, MIT Press.
6. D'Souza, E, Macroeconomics, Pearson Education

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5: FINANCIAL INSTITUTIONS

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Financial Institutions and Markets DSC-5	**4**	**3**	**1**	**0**	**Class XII**	**Nil**

Learning Objectives

This course provides an understanding of the existing financial institutions and markets in the Indian financial system. Students will be equipped with the knowledge of primary and secondary segments of the equity, money, and debt markets.

Learning outcomes

By studying this course, the students will able to:

- To understand the role of banking and non-banking financial institutions in India.

- To learn the methods for companies to raise funds in the primary market
- To use the methodology to create stock price indices in India.
- To analyze the process of issuance, trading, and settlement in equity, debt and money market instruments.

SYLLABUS OF DSC- 2

UNIT – I:Financial Institutions in India (9 Hours)

- Overview of Formal Financial System**:** Financial Institutions, Financial Markets, Financial Instruments, Financial Services, Role of Financial System in Economic Development.
- Banking and Non-Banking Institutions**:** Scheduled Commercial Banks in India, Risk Management Process in Banks, Non-Performing Assets, Tools to Manage Non-Performing Assets, Payment Banks.
- Credit Rating Agencies: Meaning, Methodology and Agencies in India.
- Housing Finance: Housing Finance Companies in India, Repricing of Loan, Floating vs. Fixed Rate, The Rest Method, Problems in Housing Finance.
- NBFCs in India**:** Objectives, Functions, Types, Difference between NBFCs and Banks, Role of NBFCs in Indian Economy.
- Regulatory Institutions: Reserve Bank of India (RBI), Securities Exchange Board of India (SEBI)

UNIT – II:Primary Market for Corporate Securities in India (15 Hours)

- Financial Markets**:** Role and Importance of Financial Markets, Types of Financial Markets- Equity Market, Debt market, Money market, Forex Market.
- Procedure of an IPO**:** Entry Norms for IPOs -Profitability Route, QIB Route, Appraisal Route; Intermediaries to an Issue, Pricing Methods-Fixed Price Process, Book Building Mechanism (Book Building Process, Bidding Process, Reverse Book Building, Limitations), Green Shoe option.
- Methods of Raising Funds**:** Venture Capital, Private Equity, Public Issues- IPO, FPO, offer for sale; Rights Issue, Private Placement -Preferential Issue, Qualified Institutional Placements, Disinvestment of PSU- Objectives, Sell-off methods.
- Raising of Funds from International Markets-ADRs, GDRs, FCCB and Euro Issues, Masala Bonds.
- Listing and Delisting of Corporate Stocks in Indian Stock markets.

UNIT – III:Secondary Market in India (12 Hours)

- Overview of Secondary Market**:** Functions of Secondary Market, Demutualization of Stock Exchange, Bulls and Bears in Stock Markets, Volatility and Circuit Breakers in stock Market, Stock exchanges in India; International stock exchanges, Capital Market Scams.
- Market Mechanism**:** Financial Instruments-Equity Shares, Debentures & Bonds, Derivatives. Types of Brokers, Depository Process in India.
- Trading, Clearing and Settlement of securities**:** Types of orders, Contract Note, Clearing Corporations (ICCL, NSCCL), Depositories (NSDL, CDSL), Settlement Mechanism.
- Risk Management**:** Margin Requirement and Capital requirement of a Broker, MTM and VaR Margins, Margin Trading and Margin Adjustments.

- Indian Stock Indices**:** Major Indices in India (Sensex and Nifty), Market Capitalization (free float, full float methodology), Calculation Methodology (Price weighted, Equal weighted, Fundamental weighted, Market Capitalisation weighted Index), Classification of Securities to be included in the Index, Impact of corporate actions (Rights, Bonus, and Stock split) on security prices and indices.

UNIT – IV: Money Markets & Debt Market in India (9 Hours)

- Money Market**:** Characteristics, Functions and Benefits of Efficient Money Market, Participants in money markets, Money Market Instruments- Auctioned Treasury Bills (Features, Types, and Issuance/Sale by Auction), Commercial Paper (Guidelines and Process for Issuance), Commercial Bills (Features and Types), Certificate of Deposits (Guidelines and Process for Issuance), Call/Notice Money (Reason of volatility and Process of Issuance) Repo, Reverse Repo.
- Long Term Debt Market**:** Participants and Instruments in Debt market, Private Corporate Debt Market-Issue and listing of Debt Securities; Govt Securities Market-Issuers, Investors and Types; Govt Dated Securities- Issuance, Trading and Settlement. RBI Direct Portal for retail investors for Government Securities

Notes:

1. The relevant rules, regulations and guidelines of the RBI, the SEBI and other regulators for all of the above topics should be covered.

Essential/recommended readings

1. Khan M. Y. Indian Financial System. Tata McGraw Hill.
2. Kannan, R., Shanmugam, K.R., &Bhaduri, S. Non-Banking Financial Companies-Role in India's Development. Springer.
3. Pathak, B. Indian Financial System. Pearson.
4. Eakins, Stanley G. Finance: Investments, Institutions and Management. Addison-wesley Publications.
5. National Stock Exchange of India (2003), "Indian Securities Market: A Review", NSE, Mumbai.
6. RBI Website- https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=12179&Mode=0
7. NSE website: https://www.nseindia.com/resources/publications-indian-securities-ismr

Suggested readings

1. Desai, V. Indian Financial System and Development. Himalaya Publishing House.
2. Gordan, E. Natarajan, K. Indian Financial System. Himalaya Publishing House.
3. Madura, J. Financial Markets and Institutions. Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 6: STATISTICS FOR BUSINESS

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course(if any)
		Lecture	Tutorial	Practical/ Practice		
Statistics for Business Economics -I DSC-6	**4**	**3**	**0**	**1**	**Class XII**	**Nil**

Learning Objectives

This course aims to introduce different kinds of data, its visual representation, and descriptive measures to analyse and describe times series data along with a theory and practice of indices.

Learning outcomes

By studying this course, students will be able to:

- To organize, manage, present data to gain proficiency in using statistical software for data analysis.
- To prepare a technical report/statistical analysis and interpret results to enhance the ability for broader implication of application in the statistical field.
- To conduct the survey in proper way to collect data on specific economic problem and to grasp different variety of probability/nonprobability sampling methods for selecting a sample from a population.
- To make intelligent judgments and informed decisions in the presence of uncertainty and variation.

SYLLABUS OF DSC-3

UNIT – I Descriptive Statistics (12 Hours)

Sources of data, census and sample, methods of collection, types of data. Graphical representation – Simple Charts, Box Plot, Histogram; Measures of central tendency, dispersion, skewnessand . Moments.

UNIT – II Probability and distribution (15 Hours)

Sample space, event and probability. Types of events: joint, conditional and independence. Theories of probability - Classical Theory of Probability; Relative Frequency Theory of Probability; Subjective Theory of Probability and Axiomatic Theory of Probability, Random variable - Discrete and continuous, mass and density functions, cumulative distributions and properties. Joint distributions, marginal and conditional distributions. Bayes Theorem; Mathematical expectation and variance.

Theoretical Discrete and Continuous Probability Distributions – Binomial, Poisson and Normal distributions

UNIT – III Time Series (6 Hours)

Components. Measurement of trend: linear, exponential and growth. Change in origin and scale. Measurement of seasonal fluctuations.

UNIT – IV Index Numbers (6 Hours)

Types of index number systems and their relations. Fixed and chain-base. Tests of adequacy. Base shifting, splicing and deflating. Consumer price index, GDP deflator and Stock Prices indices – BSE Sensex and Nifty Fifty.

UNIT – V Correlation and Regression (6 Hours)

Covariance & Correlation – Bivariate Analysis: Cross-tabulations and Scatter Plot; Rank Correlation and Pearson's Correlation; Impact of origin shift and change in scale of Correlation; Linear Regression – Simple and Multiple.

Practical component (30 hours)- Laboratory work using spreadsheet software. Projects using primary or secondary data.

Assessment Method

Total Marks: 100
Practical: 25
Internal Assessment: 25
End Semester Exam: 3 Hours; Maximum Marks: 50

Essential/recommended readings

1. Devore, Jay L., (2012). Probability and Statistics for Engineering and the sciences. 8th Edition, Cengage Learning.

Suggested readings

1. Miller, Irwin and Marylees Miller. John E. Freund's Mathematical Statistics with Applications, Eighth Edition, Pearson Education.

2. Nagar, A.L., and R.K. Das. Basic Statistics, Second Edition, Oxford University Press

3. Gupta, S.C., Fundamentals of Mathematical Statistics, Himalaya Publishing House

B.A. Honours Business Economics

Generic Elective Courses

GE -2: Principles of Macroeconomics

Course Title and Code	Credits	Credit distribution of the course			Eligibility Criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/Practice		
Principles of Macroeconomics	**4**	**3**	**1**	**0**	**Class XII**	**None**

Learning Objectives

This course aims at inculcating an understanding:

(i) key macroeconomic variables with a sound understanding of aggregate economic accounts and definitions.
(ii) the differences between real and nominal variables, how GDP is measured and its limited applicability to welfare.
(iii) equilibrium under different assumptions on aggregate demand and supply.
(iv) the relation between wages, prices, unemployment under different models
(v) the concept of open economy and how it determines the balance of payments, types of exchange rates.

Learning Outcomes
By studying this course, the students will be able to:

(i) understand the basic principles of and definitions of national income accounting and determination of GDP
(ii) understand basics of consumption function and different hypotheses regarding aggregate consumption behavior. ·
(iii) derive wage setting, price setting relations and labour market equilibrium. ·
(iv) learn about the key determinants of economic growth through the lens of the solow/neoclassical growth model and the difference between growth through capital accumulation and technological progress
(v) identify key macroeconomic indicators and measures of economic change, growth, and development.
(vi) apply economic theories and concepts to contemporary social issues, as well as formulation and analysis of policy.
(vii) apply basic international trade and finance concepts to global pricing issues, including working with exchange rates

Unit I: National Income and Production **[10 hours]**

Macroeconomic questions. National Income Accounts: circular flow, production income and expenditure. Limitations of GDP; real and nominal. Productivity and Incomes, Inequality of incomes and productivity and measurement. Aggregate production function and its representation. Determinants of technology.

Unit II: Economic Growth and Development **[5 hours]**

Growth and its patterns and its determinants. History of economic growth. Growth, inequality and poverty. Solow Growth Model.

Unit III: Macroeconomic Equilibrium **[15 hours]**

Measuring employment and unemployment. Labor market equilibrium and unemployment structural & cyclical. Natural rate of unemployment.
Credit markets, interest rates and supply and demand curves for credit and equilibrium. Banks & financial intermediation. Functions of banks.
Monetary system: money, types and money supply. Quantity theory of money. Inflation: causes, consequences, social costs and benefits. Central bank functions and objectives of monetary policy. Bank reserves and demand, supply of federal funds.

Unit IV: Fluctuations and Policy Interventions **[15 hours]**

Economic fluctuations and business cycles. Sources of fluctuations, multipliers, equilibrium in the short and the medium run.
Countercyclical monetary policy: controlling repo rate and other tools. Countercyclical fiscal policy: expenditure based, taxation based and others.

Essential Readings:-

Macroeconomics, Daron Acemoglu, David Laibson, John List, Peerson 2023.

Additional Readings

Core Econ Team, The Economy 1.0 and The Economy 2.0, www.core-econ.org
Case, K.E., Fair, R.C., Sharon O., Principles of Economics, Pearson

COMMON POOL OF GENERIC ELECTIVE COURSES OFFERED BY THE DEPARTMENTS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

GENERIC ELECTIVES (GE-2): INTRODUCTION TO DIGITAL MARKETING

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Digital Marketing (GE - 2)	4	3	1	0	Class 12	None

Learning Objectives

This course aims to acquaint the students with:

- Key marketing principles and terminology.
- Evolving digital landscape and the strategic role of digital marketing processes and tools in designing the overall Marketing strategy.
- Methodologies, tools and technologies involved in digital marketing.
- Importance of search engines and their role in digital marketing ecosystem.

Learning outcomes

By studying this course, students will be able to:

- Understand the concept of digital marketing and its integration with traditional marketing.
- Understand customer value journey in digital context and behaviour of online consumers.
- Learn email, content and social media marketing and apply the learnings to create digital media campaigns.
- Examine various tactics for enhancing a website's position and ranking with search engines and search advertising.

SYLLABUS OF GE-2

Unit 1: Fundamentals of Marketing **(6hours)**

Importance of marketing; Core marketing Concepts; Company Orientations; Concept of Segmentation, Targeting-Positioning; 7 P's Framework; Product Life cycle; Pricing strategies, Types of distribution channels; Promotion Mix.

Unit 2: Marketing in the Digital World **(9 hours)**

Digital marketing: Concept, Features, Difference between traditional and digital marketing, Moving from traditional to digital Marketing; Digital Marketing Channels: Intent Based- SEO, Search Advertising; Brand Based- Display Advertising; Community Based-SMM; Others- Affiliate, Email, Content, Mobile; Customer Value Journey: 5As Framework; The Ozone O_3 Concept Key; Traits of online consumer.

Unit 3: Content, Email and Social Media Marketing (15 hours)

Content Marketing: Developing a content marketing strategy; Email Marketing: Types of Emails in email marketing, Email Marketing best practices; Social Media Marketing: Building Successful Social Media strategy; Social Media Marketing Channels; Facebook, LinkedIn, YouTube (Concepts and strategies)

Unit 4: Search Marketing (15 hours)

Introduction of SEM: Working of Search Engine; SERP Positioning; Search Engine Optimization: Overview of SEO Process; Goal Setting-Types

On-Page Optimization: Keyword Research, SEO Process -Site Structure, Content, Technical Mechanics, Headings, Image & Alt text, Social Sharing, Sitemaps, Technical Aspects-Compatibility, Structured Data Markup.

Off Page Optimization: Link Formats, Link Building, Content Marketing, Social Sharing; Black and White Hat Techniques

Search Advertising: Overview of PPC Process; Benefits of Paid Search; Basis of Ranking; Goal Setting-Objectives; Account Setting-Creation of Google Ads, Campaign architecture, Campaign setup, Targeting, Bid Strategy, Delivery, Ad Scheduling, Ad Rotation, Keyword Selection; Ad Copy composition, Ad Extension

Overview of Display Advertising: Working of Display Advertising; Benefits and challenges.

Essential/recommended readings

1. Dodson, I. (2016). The art of digital marketing: the definitive guide to creating strategic, targeted, and measurable online campaigns. John Wiley & Sons.
2. Kartajaya, H., Kotler, P., &Setiawan, I. (2016). Marketing 4.0: moving from traditional to digital. John Wiley & Sons.
3. Ryan, Damien. Understanding Digital Marketing - Marketing Strategies for Engaging the Digital Generation. Kogan Page Limited.

Additional References:

1. Kotler, P. (2009). Marketing management: A South Asian perspective. Pearson Education, India.
2. Maity, Moutusy. Internet Marketing: A practical approach in the Indian Context. Oxford Publishing.
3. Gupta, Seema. Digital Marketing. McGraw Hill
4. Ultimate guide to digital Marketing. Digital Marketer

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4): STATISTICS FOR BUSINESS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Statistics for Business (GE-4)	4	3	0	1	Class 12	Mathematics at Class 12

Learning Objectives

The objective of this course is to enable students to:

- Describe data using summary statistics.
- Develop detailed understanding of discrete and continuous distributions.
- Develop skills in statistical computing, statistical reasoning and inferential methods.
- Comprehend and analyse real data like real indices.

Learning outcomes

By studying this course, students will be able to:

- Learn tools and concepts of statistical analysis and interpretation.
- Comprehend fundamentals of probability theory.
- conduct statistical computing, statistical reasoning and use inferential methods.
- Comprehend and analyse real data like real indices.

SYLLABUS OF GE-4

Unit 1: Descriptive Statistics and Exploratory Data Analysis (12hours)

Types of Variables (Quantitative, Qualitative, discrete, continuous), Scales of Data Measurement (nominal, ordinal, Interval & Ratio), Variable-; Primary & secondary Data.

Frequency distributions, Relative Frequency, Cumulative Distributions, Percentiles, Quartiles; Graphical representation of data- bar charts, pie, histograms, box plots.

Univariate Measures Mean, median, mode, Geometric Mean, Harmonic Mean, Weighted Mean & their properties. Selection of a measure of central tendency. Range, inter-quartile range, quartile deviation, mean deviation, standard deviation, variance, coefficient of variance, properties of standard deviation, merits & demerits. Skewness and Kurtosis: Meaning, measures- Karl Pearson, Bowley, Kelly's, Kurtosis- meaning, Moments, Kurtosis

Bivariate Analysis: Cross-tabulations and Scatter diagram; Correlation, Association and linear regressions

Unit 2: Probability and Distributions (12 hours)

Axioms of probability; Review of counting rules, experiments, sample space, simple and complex events; Addition and multiplication rules; Concepts of Mutually exclusive events, independent events; Concepts of Joint, marginal and conditional probability; Permutation and Combinations

Concept of Discrete and continuous Random Variables; Expected value and variance; Examples of Theoretical Discrete and Continuous Probability Distributions – Binomial, Poisson and Normal distributions.

Unit 3: Sampling, Estimation and Hypotheses (15 hours)

Sample Statistics versus population parameters; Definition and Statistical properties of a Random Sample; Point and Interval Estimation and Small Sample Properties of Estimators (unbiasedness, efficiency); Central Limit Theorem. (Interval estimation for mean for large samples)

Basic concepts of Hypotheses Testing: Formulation of Null and Alternate Hypotheses; One-tailed and two-tailed Tests about population Mean; Concepts of Type I and Type II errors. (Hypothesis testing for mean and difference between mean for large samples only)

Unit 4: Index Numbers (6hours)

Index Numbers: Use and construction of Laspeyres and Paasche indexes; Fixed and chain base index numbers; Construction of real indexes: Consumer Price Index and BSE index.

Practical component (30 hours) - Practicals to be based on a spreadsheet package (Microsoft Excel or equivalent) to enable students to execute all the measures and tests taken up in the theory classes in the course.

Essential/recommended readings

1. Spiegel, M.R.(2003). Theory & Problems of Statistics, Schaum's outline series, McGraw Hill.
2. Levin, Richard I. and Rubin, David (1998). Statistics for Management (7th Edition), Pearson.
3. Gupta, S.C. (2018). Fundamentals of Statistics, Himalaya Publishing House
4. Spiegel, M. and Stephens, Larry (2017). Statistics (Schaum's Outline Series), Tata-Mcgraw-Hill, New Delhi

Suggestive readings

1. Nagar, A. L. and Das. R. K.. Basic Statistics (2nd Edition), Oxford University Press
2. Karmel, P. H. and Polasek, M. (1978). Applied Statistics for Economists (4th edition), Pitman.
3. Larsen, Richard J. and Marx, Morris L. (2011). An Introduction to Mathematical Statistics and its Applications. Prentice Hall.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6): INTRODUCTION TO FINANCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Finance (GE-6)	4	3	1	0	Class 12	None

Learning Objectives

This course aims at providing a comprehensive introduction to:

- Financial system and its primary constituents.
- Sources of finance and time value of money.
- Basics of Investment and various asset classes.
- Key concepts of international financial management.

Learning outcomes

By studying this course, students will be able to:

- Understand the meaning, scope and sources of Finance
- Estimate the present and future values of assets
- Examine the relationship between risk and return, and the nature and sources of risk in a stock market context
- Analyse the currency exchange market to deal exchange rate risk.

SYLLABUS OF GE-6

UNIT – I: A Primer on Financial Markets & Institutions (9hours)

An overview of financial system: characteristics & requirements. Components & functions of financial system. Financial markets: characteristics & types. Types & role of Financial Institutions. An overview of the 2007–2008 Financial Crisis.

Unit 2: Corporate Finance: An Overview (12hours)

Nature, scope and objectives of Finance, Emerging role of Finance Managers in India and Agency problem.Concept & Meaning of Financial Management, goals of financial management, the three financial decisions- Investing, Financing & Dividend.

Sources of Finance: Equity & Preference Capital, Retained earnings, Debt, Bonds, Long term loans, Short term advances from banks, public deposits & advances from customers and trade creditors.

Concept of Time Value of Money, Compound Value, Present Value, Annuity and Perpetuity.

Unit 3: Investment Management: Basics & Process (15 hours)

An overview of investment- Investment process, Types of assets- real & financial.Types of investors, types of financial securities & attributes of a good investment.

Concept of Risk & Return (Single asset), risk-return trade off, types of risk- systematic & unsystematic, types of return-holding period return, expected return, actual return.
Examining four broad asset classes: equity, bonds, mutual funds & derivatives.
Equity- three schools of thought on equity valuation- a brief discussion on fundamental analysis, technical analysis and efficient market hypothesis.
Bonds- types, fundamentals, relationship between interest rates & bond prices& yield curve.
Mutual Funds– meaning, importance, structure, mutual fund schemes, Systematic Investment Plan (SIP), Systematic Withdrawal Plan (SWP), Exchange Traded Fund (ETF), Equity Linked Savings Scheme (ELSS) and NAV of Fund.
Derivatives – Meaning and Types of Derivative Instruments (Forwards, Futures, Options and Swaps).
Concept of diversification & portfolios. Portfolio Risk &Return(two security only).

Unit 4: A Beginners' Guide to International Finance (9hours)
International Monetary System- development of international finance and how the international monetary system evolved. Currency exchange markets and rates- currency exchange markets, exchange rate quotations, currency exchange rate appreciation and, depreciation, factors that affect currency exchange rates and arbitrage. Conducting business internationally. Concept of exchange rate risk.

Essential/recommended readings

1. Bodie, Zvi., Kane, Alex and Marcus, Alan J.. Investments. McGraw Hill.
2. Chandra, P.. Security Analysis and Portfolio Management. Tata McGraw Hill.
3. Pathak, Bharati. Indian Financial System. Pearson.
4. Ronald, W. Melicher and Norton, Edgar A.. Introduction to Finance: Financial Markets, Investment, and Financial Management. Wiley Publishing House. 2012.
5. Rustagi, R.P., Fundamentals of Financial Management. Taxmann.

Suggestive readings

1. Khan, M. Y & Jain P. K., Financial Management: Text and Problems. Tata McGraw Hill. New Delhi.
2. Kohn, Meir. Financial Institutions and Markets. Oxford University Press.
3. Kidwell, David S., Backwell, David W., Whidbee, David A. and Sias, Richard W. Financial Institutions, Markets and Money. Wiley Publications.
4. Madura, Jeff. Financial Markets and Institutions. South Western Cengage Learning.
5. Reilly, Frank K, and Brown, Keith C. Investment Analysis and Portfolio Management. Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-8): ENVIRONMENTAL ECONOMICS AND

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Environmental Economics and Climate Change (GE-8)	4	3	1	0	Class 12	None

Learning Objectives

This course aims at inculcating an understanding of:

- How economic activities are affecting the environment.
- Social value of environmental resources.
- Climate change and its consequences.
- Efficient and effective policy measures for protecting the environment.

Learning outcomes

By studying this course, students will be able to:

. · Understand the linkage between environment and economics.

· Learn the basic theories of environmental economics.

· Understand the basic terminologies related to environment and Climate change.

· Analyse the effects of climate change on India and its future plan for environmental protection and mitigation.

SYLLABUS OF GE-8

UNIT – I: Introduction **(8 hours)**

Introduction to Environmental Economics, Material Balance model- economy environmental interactions, reasons for environmental degradation (population, technology, GDP), balance between environment and growth.

Unit 2: Economic Growth and Environmental Degradation **(10 hours)**

Theories of relationship between economic growth and environmental degradation: The environmental Kuznets curve hypothesis, The Brundtland Curve hypothesis, The environment Daly Curve hypothesis.

Unit 3: Climate Change and its Challenges **(15 hours)**

Introduction to the Climate Change, Drivers of Climate Change, Global impacts of Climate Change: Anthropogenic, Global warming, ozone hole, biodiversity loss, ecosystem services, natural capital and resources. Effect of Climate Change on India: Agriculture, Biodiversity, vulnerability of Coastal Belt, Rural Livelihoods and Food Security in India.

Unit 4: Actions Taken and Policy Framework (12 hours)

Global Level: Adaptation and Mitigation, Governmental and Intergovernmental Actions to Combat Climate Change: The Role of the Intergovernmental Panel on Climate Change (IPCC), United Nations Framework Convention on Climate Change, The Kyoto Protocol, Paris Agreement etc. The global carbon market (CDM, JI, ET).India's Position on International Climate Negotiations, India's National Action Plan on Climate Change.

Essential/recommended readings

1. Callen,Thomas (2007). Environmental Economics, Thomson Learning Inc. Indian Edition.
2. Dubash, Navroz (2012). Handbook of Climate Change and India: Development, Politics and Governance, Earthscan
3. Bhattacharya, R. N. (ed.) (2001). Environmental Economics, An Indian Perspective, Oxford University Press.

Suggestive readings

1. Romm, J.J. 2018. Climate change: What Everyone Needs to Know. Oxford University Press
2. Dash. S.K. 2008. Climate Change, Cambridge University Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Annexure-1

Based on Undergraduate Curriculum Framework 2022

UNIVERSITY OF DELHI

UNDERGRADUATE PROGRAMMES OF STUDY

STRUCTURE, COURSES & SYLLABI OF SEMESTER VIII

SEMESTER -III

B.A. (HONOURS) BUSINESS ECONOMICS

SEMESTER -III
B.A (Hons) BUSINESS ECONOMICS
Category I

(B.A. Honours in Business Economics in three years)

DISCIPLINE SPECIFIC CORE COURSE – 7 (DSC-7): MICROECONOMICS-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Microeconomics-II (DSC 7)	4	3	1	0	Class 12	None

Learning Objectives

This course aims to provide to the student an understanding of:

- the concepts of a market structure and equilibrium in perfectly and imperfectly competitive market situations.
- the possible equilibria in factor markets
- equilibrium in all commodity and factor markets
- the concept of economic welfare and its properties.

Learning outcomes

By studying this course, the students will be able to:

- Identify different forms of market structure, their resource allocation and welfare implications.
- Express rational agent desires in a game theoretic framework.
- Analyse profit maximising strategies under different oligopoly models.
- Use a social welfare function to evaluate societal outcomes

SYLLABUS OF DSC-7

UNIT–I: Market Structure **(18 hours)**

Perfect Competition: Firm equilibrium in the short and long run. Short run supply curve for the firm and the market, long run industry supply; constant, increasing and decreasing cost industry; producer and consumer surplus. Monopoly: Profit Maximisation, multi-plant firm, monopoly power and its measurement, social costs of monopoly, price discrimination. Monopolistic Competition: product differentiation; equilibrium of the firm in the industry-with entry of new firms and with price competition, Comparisons. Oligopoly and Game Theory: Cournot model and reaction curves, Stackelberg's model, Bertrand model, Quantity leadership, Price leadership, Non collusive stable equilibrium,

Simultaneous quantity setting, Collusion, Cartels, Concepts of Game Theory: Dominant strategies and Nash Equilibrium, Mixed strategies, Prisoner's Dilemma.

UNIT – II: Factor Market (10 hours)

Factor pricing in the case of single and many variable factors, demand for labor in a product market with perfect competition and monopoly, monopsony, bilateral monopoly and role of labour unions. Economic rent and quasi rent.

UNIT – III: General Equilibrium (9 hours)

Equilibrium and efficiency under pure exchange and production; Edgeworth box; Pareto optimality conditions; market trade; Walras' law; existence of equilibrium and efficiency; Implications of the first and second welfare theorem.

UNIT – IV: Welfare (8 hours)

Social Welfare Function; welfare maximization, Fair allocation, Envy and equity, Arrow's Impossibility Theorem

Essential/recommended readings

1. Varian, H. R. (2020). Intermediate microeconomics: A modern approach. W. W. Norton.
2. Bernheim, B., Whinston, M. (2009). Microeconomics. Tata McGraw- Hill.
3. Snyder, C., Nicholson, W. (2010). Fundamentals of Microeconomics. Cengage Learning
4. Pindyck, Robert S. & Rubinfeld, Daniel L. (2017). Microeconomics. Pearson

Suggestive readings

1. Dr. Robert E. Hall and Dr. Marc Lieberman. (2009).Microeconomics - Principles and Applications. South Western Educational Publishing.
2. Bergstrom, T., Varian, H. (2014). Workouts in Intermediate Microeconomics. W. W. Norton.
3. Joseph E. Stiglitz and Carl E. Walsh. (2006). Principles of Microeconomics. W. W. Norton & Co.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 8 (DSC-8) MATHEMATICS FOR BUSINESS ECONOMICS - II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Mathematics for Business Economics –II (DSC 8)	4	3	1	0	Class 12	None

Learning Objectives

This course aims to introduce to the student the understanding of

- real multivariate functions and their properties
- the optimisation conditions for real multivariate functions
- differential equations and their applications
- difference equations and applications

Learning outcomes

By studying this course, the students will able to:

· To be adept in the use of differential and integral calculus to examine the properties of functions used in economics and business

· To solve numerical problems of multivariable optimization and properties of the solutions.

· To model business and economic scenarios in mathematical terminology and to appreciate economic models by using formal mathematical methods.

SYLLABUS OF DSC-8

UNIT – I:Multivariable Functions (12 hours)

Geometric representations: graphs and level curves; differentiability: characterisations, properties with respect to various operations and applications; higher order derivatives: properties and applications; the implicit function theorem and application to comparative statics problems; homogeneous and homothetic functions: characterisations and applications

UNIT – II: Multivariable Optimization (15 hours)

Multivariate optimisation: Convex sets; geometric properties of functions: convex functions, their characterisations, properties and applications; further geometric properties of functions: quasiconvex functions, their characterisations, properties and applications; unconstrained optimisation: geometric characterisations, characterisations

using calculus and applications. Multivariate Optimization with constraints: Constrained optimisation with equality constraints: geometric characterisations, Lagrange characterisation using calculus and applications; properties of value function: envelope theorem and applications.

UNIT – III: Economic Dynamics -1 **(9 hours)**

First order differential equations, phase diagrams and stability.

UNIT – IV: Economic Dynamics -2 **(9 hours)**

First order difference equations, equilibrium and stability

Essential/recommended readings

1. Sydsaeter, K., Hammond, P. (2002). Mathematics for economic analysis. Pearson Educational.

Suggestive readings

1. Chiang, Alpha C., and Wainwright Kevin. Fundamental Methods of Mathematical Economics. Boston, Mass: McGraw-Hill/Irwin, 2005
2. Hoy, Michael, Livernois, John, McKenna, Chris, Rees, Ray and StengosThanasis (2011) Mathematics for Economics. Cambridge, Mass. : MIT Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 9 (DSC-9): CORPORATE FINANCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Corporate Finance (DSC 9)	4	3	1	0	Class 12	None

Learning Objectives

This course aims to

- introduce the basic concepts of financial management and its objectives.
- provide an understanding of investment decisions and of working capital.
- introduce and discuss the issues in the cost of capital.
- examine the theories and analysis involved in financing decisions and dividend distribution.

Learning outcomes

By studying this course, students will be able to:

- To learn the role and objectives of financial management in business corporations.
- To acquire skills to analyse corporate behaviour during procurement and development of resources.
- To understand capital structure and discuss the factors that financial managers consider while determining a company's financing strategy
- To critically discuss the theories relating to dividends policies and cost of capital

SYLLABUS OF DSC-9

UNIT – I: Introduction (6 hours)

Nature and Scope of Financial Management. Traditional and Modern Approach to the concept of financial management. Functions of finance – Finance Decision, Investment Decision, Dividend Decision. Objectives of Financial Management - Profit Maximisation and Wealth Maximisation. Concept of Time Value of Money.

UNIT – II: Investment Decision (15 hours)

Capital Budgeting - Nature and meaning of capital budgeting; Types of decisions: - Accept-Reject, Replacement, Mutually Exclusive. Estimation of Relevant cash flows. Evaluation techniques - Accounting Rate of Return, Pay Back, Net Present Value, Internal Rate of Return, Profitability Index Method.

Concepts and Definition of working capital. Determining Financing Mix; Permanent and temporary working capital; Determinants of working capital; Computation of Working Capital.

UNIT – III: Cost of Capital (9 hours)

Concept and Measurement of Cost of Capital: Measurement of specific costs - Cost of debt:- perpetual debt and Redeemable debt; Cost of Preference Share; Cost of Equity Capital – Dividend valuation model and CAPM; Cost of Retained Earnings. Computation of Overall Cost of Capital based on book value weights and market value weights.

UNIT – IV: Financing Decision (15 hours)

Leverage Analysis - Operating, Financial, and Combined Leverage, Earning Before Interest and Tax (EBIT) – Earning Per Share (EPS) analysis, Indifference point. Capital structures theories - Net income approach; Net operating income approach; Modigliani-Miller (MM) approach. Factors affecting capital Structure.

Dividend Decision: Relevance and irrelevance of dividends. Residual theory of dividends; Modigliani and Miller hypothesis; Walter's model; Gordon's model. Factors affecting Dividend Policy.

Essential/recommended readings

1. Khan, M.Y., & Jain, P.K. Basic Financial Management. Tata McGraw Hill Education Private Limited.
2. Pandey,I.M. Financial Management. Vikas Publishing House Pvt. Ltd. New Delhi
3. Rustagi, R. P. Fundamentals of Financial Management, Taxmann publication(Pvt) Ltd,New Delhi.

Suggestive readings

1. Van Horne, J.C. Financial Management and Policy. Prentice Hall of India.
2. Levy, H. and Sarnat, M. Principles of Financial Management. Prentice Hall.
3. Brealey, Richard, A., & Myers, Stewart, C. Principles of Corporate Finance. Tata McGraw Hill Publishing Company Limited.
4. Chandra, Prasanna. Financial Management-Theory and Practice. Tata McGrawHill.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 1 (DSE-1): INCOME TAX LAW AND PRACTICE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Income Tax Law and Practice (DSE 1)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at

- Introducing basic definitions in Income Tax Act
- Computing taxable income under the heads Salaries and House Property
- Calculate Profits and Gains of Business or Profession, Capital Gains and Income from other sources
- Understand deductions from gross taxable income and filling of returns.

Learning outcomes

By studying this course, the students will be able to:

- To Understand the Process of determination of taxable income
- To apply the deductions to taxable income as per the latest provisions of Income-tax Act, 1961
- To Acquire the skill of Filling Basic Returns of Income Tax

SYLLABUS OF DSE-1

Unit 1: Introductory Concepts (3 hours)

Permanent Account Number (PAN), Assessment Year, Previous Year, Person, Assessee, Gross Total Income, Total income and its computation, Tax Rates, Residential status; Relationship between Residential Status and Incidence of Tax. Incomes Exempted under section 10.

Unit 2: Computation for "Salaries" and "Income from House Property" (15 hours)

Income under the head "Salaries": Meaning of Salary, basis of charge, Allowances, Perquisites, permissible deductions from salary income, Deduction under Section 80 C.

Income under the head "Income from House Property": Basis of charge, income from let out house property, income from self-occupied property.

Unit 3: Computation for 'Profits and Gains of Business or Profession', 'Capital Gains' and 'Income from other sources' (15 hours)

Profits and gains of business or profession: Basis of charge, important rules regarding assessment of PGBP, computation of Profits from Business or Profession, deductions expressly allowed, expenses expressly disallowed.

Capital gains: basis of charge, meaning of capital asset, cost of acquisition, improvement and indexation, exemptions for capital gains arising from transfer of Capital Assets, calculation of tax on short-term and long-term capital gains.

Income from other sources: basis of charge, dividend, winnings from lotteries, crossword puzzles, etc., interest on securities, advance money received for transfer of a capital asset, permissible deductions.

Unit 4: Computation of Total Income and Tax Liability (12 hours)

Computation of total income; Deductions from gross total income under section 80 C to 80 U; Rebates and reliefs; Set-off and carry forward of losses (Concept only), Concept of advance payment of Tax and Deduction of Tax at Source. Computation of Taxable Income and liability of Tax. e-Filing of Returns: ITR-1 (SAHAJ) and ITR-2

Essential/recommended readings

1. Ahuja, G. and Gupta, R. Simplified Approach to Income Tax. Flair Publications (P) Ltd.
2. Singhania, V.K. and Singhania, M. Students Guide to Income Tax. Taxmann Publications (P) Ltd.

Software to be used for teaching are:

1. 'Excel Utility' available at incometaxindiaefiling.gov.in
2. Vinod Kumar Singhania, e-filing of Income Tax Returns and Computation of Tax Taxmann Publication (P) Ltd, New Delhi. (Latest version)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 2 (DSE-3): ENTREPRENEURSHIP

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Entrepreneurship (DSE 3)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at:

- To introduce the concept of entrepreneurship and its role in the economy
- To launch an Entrepreneurial Venture and writing a business plan
- To identify and explore legal and financial requirements of a business
- To understand the role and creativity in sustainable Business

Learning outcomes

By studying this course, the students will be able to:

- To develop critical thinking, problem solving skills and entrepreneurial mind-set in students.
- To enhance the understanding of the entrepreneurial process from idea generation, to concept development and creation of the venture.
- To enable the understanding of the business models, legal aspects of enterprise and writing a business plan.
- To apprise students with ways to finance and scale up the business.

SYLLABUS OF DSE-2

Unit 1: Introduction to Entrepreneurship (9 hours)

Concept of Entrepreneurship; Attributes of Entrepreneur; Distinction between entrepreneur and manager; Concept of corporate entrepreneurship/ intrapreneurship; Concept of social entrepreneurship; Role of entrepreneurship for an economy; Understanding business model strategy; Legal forms of enterprise; case study discussion on entrepreneurs, intrapreneurs, business models

Unit 2: Launching Entrepreneurial Venture (12 hours)

Identification of opportunities and Idea generation and screening methods- Brainstorming, mind-mapping, story-telling, SCAMPER, attribute listing, focus group

interviews, customer feedback; Feasibility studies- Marketing, Financial, Technical, Socio-economic Feasibility; Writing Business Plan

Unit 3: Legal and Financial Aspects (12 hours)

Legal requirements of business (Basic concept and relevance of patents, copyrights, and trademark); Financing- Start-up phase financing, growth stage financing, Maturity-phase financing; angel investment and venture capital, other forms of external financing; case study discussion on financing a venture

Unit 4: Sustaining and Scaling Up (12 hours)

Keeping the entrepreneurial spirit alive- Challenges and remedies, Role of creativity and innovation, Barriers to entrepreneurship, Concept of sustainability, Ethical Perspectives; Introducing Shared Innovation into the Business Model; Evolution of CSR from Compliance to Sustainable Entrepreneurship; How to Design CSR Strategies that Optimize Impact for Business and Society

Essential/recommended readings

·1. Harvard Business Review Entrepreneur's Handbook: Everything You Need to Launch and Grow Your New Business

2. Hisrich, R. D. International entrepreneurship: starting, developing, and managing a global venture. Sage Publications.

3. Sharma, S., Starik, M., & Wuebker, R. Sustainability, innovation and entrepreneurship: introduction to the volume.

Additional References:

1. Blank, S., Andreessen, M., Hoffman, R., & Sahlman, W. A. (2018). HBR's 10 Must Reads on Entrepreneurship and Startups (featuring Bonus Article “Why the Lean Startup Changes Everything” by Steve Blank). Harvard Business Press.

2. Drucker, P. (2014). Innovation and entrepreneurship. Routledge.

3. Hisrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A.: Entrepreneurship, Tata McGraw Hill.

4. Kuratko, D.F., and Rao, T. V., Entrepreneurship: A South-Asian Perspective, Cengage.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3): LEGAL ENVIRONMENT OF BUSINESS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Legal Environment of Business (GEC 3)	4	3	1	0	Class 12	None

Learning Objectives

The course intends:

- To familiarize the student with the concept and essentials of Indian Contract act which govern business for its efficient conduct and to apply them in real life situations.
- To explain the meaning, nature and incorporation of a company.
- To make students understand and apply the provisions of Sale of Goods Act and Consumer Protection Act.
- To recognize and articulate legal principles related to Limited Liability Partnership and Information Technology Act.

Learning outcomes

By studying this course, students will be able to:

- To understand the basic rules and provisions of Contract and Agreements.
- To know the provisions to Formation and functioning of company and LLP.
- To understand the significance and role of law of sale of goods act
- To have in- depth knowledge of Information Technology Act And legal framework of right to Privacy, Data Security and Data Protection.
- Apply the law correctly to different facts and in different contexts

SYLLABUS OF GEC-3

Unit 1: Indian Contract Act **(12 hours)**

Meaning and Essentials of a Contract; Valid, Void and Voidable Contract; Offer and Acceptance; Consideration; Capacity of Parties; Free Consent; Discharge of Contract and Remedies for Breach of a Contract.

Unit 2: Companies Act **(12 hours)**

Meaning and Nature of Company; Promotion and Incorporation of a Company; Memorandum of Association; Articles of Association; Misleading Prospectus and

remedies available to the parties; Board of Directors and their qualification, duties, powers. Company Meetings and Resolutions.

Unit 3: Sale of Goods Act and Consumer Protection Act (12 hours)

Essentials of a Contract of Sale; Sale and Agreement to Sell, Conditions and Warranties; Transfer of Title by Non-Owners; Doctrine of Caveat Emptor; Rights of Unpaid Seller.**Consumer Protection Act 2009**: Scope and Applicability of the Act. Rights of consumer. Procedure for complaints. Duties and power of Central Consumer Protection Authority.

Unit 4: Limited Liability Partnership Act and IT Act (9 hours)

Meaning and nature of LLP; LLP and Company; LLP Agreement, Partners and Designated Partners, Incorporation of LLP; Partners and their Relations, Extent and limitation of liability of LLP.

Information Technology Act 2000: Concept and role; Digital signature, Electronic governance, Attribution, Acknowledgement and dispatch of electronic records, Regulation of certifying authorities, Digital signatures certificates, Duties of subscribers, Penalties and adjudication, Appellate Tribunal , Offences.

Essential/recommended readings

1. Bansal, V & Arora, A. Corporate Laws. Vikas Publishing, House (P) Ltd. New Delhi.
2. Kuchhal M.C & Vivek K. Business Legislation for Management. VIKAS Publishing House (P) Ltd.
3. Kumar, A. Corporate Laws. International Book House (P) Ltd.
4. Bare Acts relating to the laws.

Suggestive readings

1. Chadha, R,. Chadha, S. Corporate Laws. Mayur Paperbacks. New Delhi.
2. Maheshwari & Maheshwari. Business Law. National Publishing House. New Delhi.
3. Singh, Avtar. The Principles of Mercantile Law. Eastern Book Company. Lucknow.
4. Tulsian, P.C. Business Law. Tata McGraw Hill. New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5): QUANTITATIVE TECHNIQUES IN

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Quantitative Techniques in Management (GEC 5)	4	3	1	0	Class 12	None

Learning Objectives

To apprise students:

- To understand the concepts, formulation and interpretation of linear programming methods and its application in diverse problems.
- To formulate and solve Transportation and Assignment problems
- To understand basic concept, construction of the Network diagram and Critical Path Analysis
- To introduce game theory and network analysis forms part of the course.

Learning outcomes

By studying this course, students will be able to:

- Identify and develop operational research models from the verbal description of the real system.
- Understand the mathematical tools that are needed to solve optimization problems.
- Develop critical thinking and use PERT and CPM techniques to improve decision making.

SYLLABUS OF GEC-5

UNIT – I: Introduction - Operations Research, Linear Programming (15 hours)

(i) Introduction to Operations Research, characteristics, Phases, Methodology, Applications and scope

(ii) Formulation of Linear Programming problems, Graphical Solutions (Special cases: Multiple optimal solution, infeasibility, unbounded solution); Simplex Method, Special cases, Big-M method and Two-phase method; Duality (emphasis on formulation & economic interpretation); Sensitivity Analysis. (Excel Solver application)

UNIT – II:Transportation and Assignment Problem (12 hours)

(i) Transportation Problem: Formulation, Solution by N.W. Corner Rule, Least Cost method, Vogel's Approximation Method (VAM), Modified Distribution Method; Special cases: Multiple Solutions, Maximization case, unbalanced case, prohibited routes.

(ii) Assignment Problem: Hungarian Method, Special cases: Multiple Solutions, Maximization case, Unbalanced case, Restrictions on assignment.

UNIT – III: Network Analysis (9 hours)

Basic Concept, Construction of the Network diagram, Critical Path Analysis, float and slack analysis (Total float, free float, independent float), probability consideration in PERT (Interface with Project Management open-source software)

UNIT – IV: Decision Theory (9 hours)

Decision making environment, Construction of Pay off Table, Opportunity Loss Table, Decision under uncertainty. Decision under Conflict: Game Theory, Two-person Zero-Sum games, Maximin Minimax Principle, Games without Saddle point - Mixed strategy, Dominance Rule.

Essential/recommended readings

1. Vohra, N.D., Quantitative Techniques in Management (5th ed.). Tata McGraw Hill
2. Swarup, K., Gupta, P.K. and Mohan, Man, Introduction to Management Science Operations Research (19th ed.). Sultan Chand & Sons.
3. Sharma, J.K., Operations Research: Theory and Applications (6th ed.). Trinity.
4. Taha, H.A., Operations Research: An Introduction (9th ed.). Pearson.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-7): ECONOMICS OF STARTUPS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Economics of Startups (GEC 7)	4	3	1	0	Class 12	None

Learning Objectives

To apprise students:

- To give an overview of startups and its types that would help students to understand basics of starting up new ventures.
- To build and create a successful Business Plan
- To understand various Business models and learn startups
- To familiarize with central and state level institutions supporting small business entreprises.

Learning outcomes

By studying this course, students will be able to:

. · Understand the process and working of a startup.

· Identify the different ways in which entrepreneurs manifest in start-ups.

· Know how to create one's own business venture and the various factors that influence successful set-up and sustainable operations.

· Explore the funding and other institutions supporting small business units.

SYLLABUS OF GEC-7

UNIT – I: Startup, Generation & Experimentation (9 hours)

Concept of Startup, Role of digital technologies, Startup ecosystems, the startup movement in India; Generating a value proposition, how valuable are new ideas, Design thinking principles; Experimenting with the prototype, Introduction to lean start-ups, Lean startup principles, Learning and failing fast.

UNIT – II: Building the Business Plan (15 hours)

Beginning Considerations: Building a competitive advantage. The strategic management processes. Conducting a feasibility analysis. Forms of Business ownership. Franchising and entrepreneurship. Buying an existing business, marketing and financial considerations: Building a powerful marketing plan. E-commerce and Entrepreneur. Pricing strategies. Creating a successful financial plan. Choosing the right location and layout.

UNIT – III: Crafting business models and Lean Start-ups (12 hours)

Introduction to business models; Creating value propositions-conventional industry logic, value innovation logic; customer focused innovation; building and analysing business models; Business model canvas, Business Pitching.

UNIT – IV: Institutions Supporting Small Business Enterprises and Ethics(9 hours)

Central level institutions. State level institutions. Other agencies. Industry Associations. Class exercise- discussions on current government schemes supporting entrepreneurship and finding out which scheme will most suit the business plan devised by the student. Importance of Ethical Entrepreneurship, value of ethics to an entrepreneur.

Essential/recommended readings

1. Scarborough, N. M., Cornwall, J. R., & Zimmerer, T. (2016). Essentials of entrepreneurship and small business management. Boston. Pearson Publications.
2. Hisrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A., Entrepreneurship, Tata McGraw Hill.
3. Shukla, M.B., Entrepreneurship and Small Business Management. Kitab Mahal Publishers.

Suggestive readings

1. Hishrich, R.D. and Peters, M. Entrepreneurship. Irwin Publications.
2. Barringer, B.R. and Ireland, R. Duane. Entrepreneurship: Successfully launching new ventures. (6th Edition) Pearson
3. Kuratko, D.F., and Rao, T.V., Entrepreneurship: A South-Asian Perspective. Cengage Publications.
4. Shankar, R., Entrepreneurship: Theory and Practice. Tata McGraw Hill.
5. Kathleen, R Allen. Launching New Ventures: An Entrepreneurial Approach. Cengage Learning.
6. Fisher, Steve and Duane, Ja-Nae. The Startup Equation - A Visual Guidebook for Building Your Startup. Mc Graw Hill Education India Pvt. Ltd.

Note: **Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

REGISTRAR

GENERIC ELECTIVES (GE-9): INTERNATIONAL ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
International Economics (GE9)	**4**	**3**	**1**	**0**	**Class XII**	**NA**

Learning Objectives

This course aims at inculcating:

- Basic understanding of fundamentals of international Trade
- An overview of theories of international trade
- Understand the meaning of Balance of Payment and explore the reasons of disequilibrium.
- Determine exchange rates and understand global capital market

Learning outcomes

By studying this course, students will be able to:

- To understand basic concept and origin of International economics through the prism of classical and new classical trade theories
- To understand different terms of trade and their applicability
- To differentiate between Modern and Classical Trade theories.
- To gain knowledge about the foreign exchange markets and its working
- To learn about global capital market

SYLLABUS OF GE-9

UNIT – I: Introduction to International Trade [12hours]

Globalization and its growing importance in the world economy; Impact of globalization; International business contrasted with domestic businesses; Cost and benefit analysis of tariff, Effective rate of protection and welfare arguments of tariff and developing countries. Foreign direct investment (FDI) in world economy: Trends, Direction, and flow of FDI; Theories of FDI; Political ideology and FDI.

Unit 2: International Trade Theory [15hours]

World Trade: An overview; Theories of international trade – Mercantilism; Absolute advantage theory, Comparative advantage theory, Factory proportion theory and Leontief paradox, Product life cycle theory, New trade theory, National competitive advantage:

Porter's diamond. International Business Environment: Economic, Demographic, Cultural and Political-legal environment.

Unit 3: Balance of Payment (BoP) [6hours]

Balance of Payment: Meaning, Components (Current, Capital and Official reserve), Reasons for disequilibrium in BoP, Measures to correct disequilibrium, Understanding India's BoP and comparing it with markets like USA and China.

Unit 4: Foreign Exchange and Global Capital Market [12hours]

Exchange Rate Determination: Currency Demand and Supply Curves, Factors Affecting Exchange Rate, Global Capital Market: Introduction, Benefits of global capital market, Growth of global capital market, Global capital market risk, Eurocurrency market, Global bond market, Global equity market, Exchange rate risk, Managing exchange rate risk, Methods of Financing International Trade.

Essential/recommended readings

1. Hill, C. (2021). International business: Competing in the global market place (13th Edition). *Strategic Direction*.

2. Krugman, P. R., & Obstfeld, M. (2009). International economics: Theory and policy. Pearson Education.

3. Levi, M.D. (2009). *International Finance* (5th Edition), Taylor and Francis Ltd.

4. Madura, J. (2020). *International financial management*. Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-11): ECONOMIC POLICY FRAMEWORK

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Economic Policy Framework (GE11)	4	3	1	0	Class 12	None

Learning Objectives

This course will help students

- to understand the importance, meaning and objective of macroeconomic policies
- to understand role and effect of fiscal policy and government expenditure
- to explore role of monetary policy and banking sector in India
- to analyse efficacy of fiscal/monetary policy under fixed and flexible exchange rate

Learning outcomes

By studying this course, students will be able to:

. · Learn the basic concept of macroeconomics

· Understand how different parameters of macroeconomics work under Indian economy.

· Understand how monetary and fiscal policy works.

· Know different exchange rate regimes.

SYLLABUS OF GE-11

UNIT – I: Meaning and objectives of economic policy (8 hours)

Tools and goals (objectives and instruments of policy) Circular flow of income (start with a two sector model and go up to a five sector model); National Income aggregates and the related concepts of national income; input-output table to calculate national income using the income, expenditure and the value added methods.

Unit 2: Fiscal policy (15 hours)

Objectives and meaning; effect of fiscal policy - role of tax policy (T) and government expenditure (G), Aggregate Demand, Meaning of the multiplier. Government expenditure multiplier and balanced budget multiplier Budget –meaning and purpose – example of India's latest Budget (and various heads). Meaning of fiscal, revenue and primary deficits.

Unit 3: Monetary policy (12 hours)

Meaning and objectives; money and credit – credit creation and instruments of credit control; Inflation targeting, Banking in India – structure, recent developments; issues of NPAs and how to resolve it.

Unit 4: Exchange rate policy **(10 hours)**

Structure of BOP; meaning of current account deficit and trade deficit; exchange rate definition (real and nominal); fixed vs flexible exchange rate, efficacy of fiscal/monetary policy under fixed and flexible exchange rate , effect of a change in exchange rate on the current account (imports and exports); structure of capital account and role of capital outflows and inflows.

Essential/recommended readings

1Gupta G.S (2016), Macroeconomics - Theory and Applications (4th edition). McGraw Hill,

2. Shapiro, Edward (1982), Macroeconomic Theory, 5th edition

3. Mankiw, Gregory N. (2010), Macroeconomics (7th edition), Worth Publishers.

4. Sikdar, Soumyen (2011), Principles of Macroeconomics, Oxford University Press

5. Krugman, P.R., Obstfeld, M. and Melitz, M. (2015). International Economics: Theory and Policy, Pearson Education Limited.

6. Dua, P. (2020). Monetary Policy Framework in India, Indian Economic Review, 55(1), June 2020, pp. 117-154.

9. http://www.inclusivejournal.in/about.html.

10. Sengupta, R. and Vardhan, H., Non-Performing Assets in Indian Banks, Economic and Political Weekly, 52(12) March 25, 2017, Money, Banking and Finance Special.

11. Economic Survey, India, latest issue

12. Union Budget Statement, India, Latest issue

Suggestive readings

1Abel, Andrew, Bernanke, Ben and Croushore, Dean (2011). Macroeconomics (7th edition). Pearson

2. Ghate, C., & Kletzer, K. M. (eds.) (2016). Monetary policy in India: A modern macroeconomic perspective. Springer.

3. Kaul, Vivek (2020) Bad Money: Inside the NPA Mess and how it threatens the Indian Banking System, Harper Collins Publisher India.

4. Chhibber, Ajay and Anees, Salman Soz (2021) India's Financial Sector: A Whodunnit. In Unshackling India. Haper Collins Publishers India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Annexure-1

Based on Undergraduate Curriculum Framework 2022

UNIVERSITY OF DELHI

UNDERGRADUATE PROGRAMMES OF STUDY

STRUCTURE, COURSES & SYLLABI OF SEMESTER VIII

SEMESTER -IV

B.A. (HONOURS) BUSINESS ECONOMICS

UNIVERSITY OF DELHI

CNC-II/093/1(26)/2023-24/322
Dated: 02.08.2023

N O T I F I C A T I O N

Sub: Amendment to Ordinance V

[E.C Resolution No. 14/ (14-1-9) dated 09.06.2023]

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

Syllabi of Semester-IV, V and VI of the Department of Finance & Business Economics under Faculty of Applied Social Sciences & Humanities based on Under Graduate Curriculum Framework -2022 implemented from the Academic Year 2022-23.

SEMESTER -IV

B.A. (Honours) Business Economics

DISCIPLINE SPECIFIC CORE COURSE – 10 (DSC-10): MACROECONOMICS - II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Macroeconomics-II (DSC 10)	4	3	1	0	Class 12	Mathematics at Class 12

Learning Objectives

This course aims at inculcating an understanding:
(i) of macroeconomic outcomes arising from assumptions of individual behaviour
(ii) of equilibrium under different assumptions on aggregate demand and supply.
(iii) of the relation between wages, prices, unemployment under different models
(iv) of an economy that trades with others and how it determines the balance of payments and different types of exchange rates.

Learning outcomes

By studying this course, the students will be able to:

- Understand basics of consumption function and different hypotheses regarding aggregate consumption behavior.
- Derive wage setting, price setting relations and labour market equilibrium.
- Derive aggregate demand and aggregate supply and economy's equilibrium conditions in medium run and understand the interaction between the two.
- Understand the relationship between inflation, unemployment and output and role of expectation on policy and their effectiveness.

SYLLABUS OF DSC-10

UNIT–I: Microeconomics foundation of Macroeconomics (9 hours)
Consumption: Keynesian consumption function; Fisher's theory of optimal intertemporal choice; life cycle and permanent income hypothesis; rational expectations and random walk of consumption expenditure, Investment: determinants of business fixed investment; residential investment and inventory investment

UNIT – II: Aggregate Demand and Aggregate Supply (6 hours)
Derivation of aggregate supply curve; Interaction of aggregate demand and supply to determine equilibrium output, price level and employment, The aggregate supply curve and the price adjustment mechanism.

UNIT – III:Labour markets, Employment and Prices (18 hours)
The labour market: - determination of wages, prices, unemployment, Natural rate of unemployment and NAIRU, stagflation, expected inflation. Philips curve, inflation-expectations augmented Phillips curve, the wage-unemployment relationship: Sticky wages; from Phillips curve to the aggregate supply curve; the costs of unemployment and inflation, inflation and indexation: inflation-proofing the economy; Theory of Expectations, Inflation, unemployment and expectations, Phillips curve and adaptive and rational expectations; Dynamics of Inflation and Unemployment: Inflation, expectation and the aggregate supply curve, short and long runaggregate supply curves, dynamic aggregate demand curve; Inflation and output, the adjustment process, dynamic adjustment, interest rate and inflation: the Fishers Equation.

UNIT – IV:Open Economy Macroeconomics (12 hours)
Balance of Payments, Kinds of exchange rate, Nominal and Real Exchange rate, fixed and flexible exchange rate, Marshall Lerner condition & J curve, Mundell Fleming model, Exchange rate determination: Purchasing power parity, asset market approach and monetary approach to Balance of Payments (BoP)

Essential/recommended readings

1. Dornbusch, R., Fischer, S. and Startz, R., 2014. Macroeconomics. 11th edition, New York, McGraw-Hill Education.
2. Dornbusch, R. and Fischer, S. (2000) Macroeconomics. 6th Edition. McGraw-Hill Education.
3. Blanchard, O. (2006). Macroeconomics, 4th ed. Pearson Education.
4. C.L.F. Attfield, D. Demery and N.W. Duck, (1991) Rational expectations in macroeconomics: An introduction to theory and evidence (2nd Ed.)

5. Carlin, W and D Soskice (2007), Macroeconomics: Imperfections, Institutions and Policies, Indian Edition, OUP.
6. David C. Colander (2017) Macroeconomics (9th edition), McGraw Hill

Suggested readings

1. Bradley R. Schiller and Karen Gebhardt (2019) Macro economy Today (14th edition), McGraw Hill
2. Richard T. Froyen (2013). Macroeconomics: Theories and Policies (10th ed.), Pearson.
3. Government of India (GOI) (Latest Year), Economic Survey, Ministry of Finance New Delhi.
4. Government of India (GOI) (Latest Year), Handbook of Indian Economy, RBI Publication New Delhi.
5. N. Gregory Mankiw, Macroeconomics, Worth Publishers.
6. Chugh, S. (2015) Modern Macroeconomics, MIT Press.
7. D'Souza, E, Macroeconomics, Pearson Education
8. D. N.Dwivedi (2015), Macroeconomics- Theory and Policy, McGraw-Hill.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 11 (DSC-11): Statistics for Business Economics-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Statistics for Business Economics - II (DSC 11)	4	3	0	1	Class 12	Mathematics at Class 12 level

Learning Objectives

This course aims to develop an understanding of:

- Theories of probability distribution.
- Sampling techniques and types of sampling.
- Methods of estimation
- Testing of Hypothesis.

Learning outcomes

By studying this course, the students will be able to:

- Understand the formulation of complex decision-making problems in an uncertain environment using different statistical techniques.

- Study various research designs and appropriate sampling techniques.
- Analyze and apply some basic stochastic processes for solving real life situations and to execute statistical analyses with professional software.
- Draw conclusion about the population using hypotheses testing.

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SYLLABUS OF DSC-11

UNIT – I: Theoretical Probability Distributions (15 hours)
Discrete: Binomial and Poisson. Continuous: Normal. Mean and variance. Applications. Bivariate distributions: covariance and correlation.

UNIT – II:Sampling (9hours)
Random sampling; sampling methods; statistics and their distributions; central limit theorem, distribution of linear combination of random variables.

UNIT – III:Estimation (12 hours)
Point estimators and properties. Methods of point estimation. Sampling distributions: t, chi square and F. Interval estimation for mean, proportion and variance.

UNIT – IV: Testing of Hypothesis (9 hours)
Null and alternative hypotheses. Types of errors. Testing for the population mean, proportion and variance. One and two tail tests. P-values. Testing for difference in means and proportions; comparing variances.

Practical component (30 hours) –Practicals to be based on aspreadsheet software (Microsoft Excel or equivalent) to enable students to execute all the measures and tests taken up in the theory classes in the course.

Essential/recommended readings

1. Devore, Jay L., (2012). Probability and Statistics for Engineering and the sciences.8th Edition, Cengage Learning.

Suggestive readings

1. *Miller, Irwin and Marylees Miller*. John E. Freund's Mathematical Statistics with Applications, Eighth Edition, Pearson Education.
2. Nagar, A.L., and R.K. Das. Basic Statistics, Second Edition, Oxford University Press
3. Gupta, S.C., Fundamentals of Mathematical Statistics, Himalaya Publishing House

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – (DSC-12): MARKETING MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Essentials of Marketing Management (DSC 12)	4	3	1	0	Class 12	None

Learning Objectives

The course aims to develop an understanding of

- Firm's internal and external marketing environment.
- Segmentation and defining the target market for a selected product or service.
- Product decisions and use of pricing strategies.
- Relevance of distribution and promotional strategies in supporting marketing strategies.

Learning outcomes

By studying this course, students will be able to:

· Understand the business environment including the economic, social, political, legal, and technological forces.

· Develop key strategies for developing brands including brand equity, brand identity and brand and line extensions.

· Recognise different pricing strategies and understand issues related to distribution.

· Understand the elements of promotion- advertising, sales promotion, events, public relations and publicity, direct marketing, interactive marketing, word of mouth and public selling.

SYLLABUS OF DSC-12

UNIT – I: Introduction and Environment (9hours)

Importance and Scope of Marketing; Core Marketing Concepts; Company Orientations. Marketing Environment, an Economic Perspective: Economic, Demographic, Socio- Cultural, Technological, Political and Legal. Influence of Current Economic Situation on Marketing Functions. Michael Porter's Model of Competitive Analysis

Unit 2: Segmentation, Targeting & Positioning (9 hours)

Market Segmentation - Bases for Segmenting Consumer Market.Market Targeting- Evaluating and Selecting Market Segments. Positioning- Positioning Statement, POP and POD

Unit 3: Product & Pricing (12 hours)

Product Life Cycle- Concept and Strategic Implications; Product Mix and Line Decisions- Product Line Length, Modernisation, Line Pruning and Filling; Cannibalisation; BCG Matrix, ANSOFF Matrix; Branding- Brand Identity, Brand Equity, Brand Name Decisions. Services- Characteristics of Services. Pricing Strategies (Geographical Pricing, Price Discounts & Allowances, Promotional Pricing Tactics, Psychological Pricing, Price Discrimination)

Unit 4: Distribution & Promotion (15hours)

Channels Functions and Flows; Channel Levels.Retailing- Marketing Decisions in Retailing. Promotion: Promotion Mix; Concept Of Integrated Marketing Communication.
Advertising- Advertising Objectives, Advertising Budget, Message Generation, Media (Types, Reach Frequency, Impact); Measurement; Sales Promotion (Objectives, Major Decisions in Sales Promotion, brand dilution); Personal Selling; Events and Experiences; Public Relations and Publicity; Direct Marketing; Interactive Marketing (Introduction to Online Marketing).Word Of Mouth and Word of Web.

Essential/recommended readings

1. Kotler, P. & Keller, K. L. Marketing Management. Pearson Publications.
2. Kotler P, Armstrong G., Agnihotri P.Y &UlHaq, E. Principles of Marketing - A South Asian Perspective. Pearson Publications.
3. Ramaswamy V.S, Namakumari S. Marketing Management: Global Perspective Indian Context. Macmillan Publishers.

Suggestive readings

1. Dawn Iacobucci. Marketing Management. Cengage Learning.
2. Etzel M. J, Walker B.J, Stanton W.J and Pandit A. Marketing. Tata McGraw Hill.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 2 (DSE-2): PUBLIC FINANCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Public Finance (DSE2)	4	3	1	0	Class 12	None

Learning Objectives

The course aims to develop an understanding of

- Fundamental concepts of Public Finance.
- Economics of government expenditure and taxation
- Efficiency and equity aspect of taxation of centre and state government.
- Different types of canons in taxation.

Learning outcomes

By studying this course, the students will be able to:

- Apply tools of basic microeconomics to key policy issues relating to the spending, taxing and financing activities of the Government.
- Understand difference in impact of direct and indirect taxation.
- Understand the recent developments and issues in Indian Public Finance.

SYLLABUS OF DSE-2

Unit 1: Theory of Public Finance (12 hours)

Public finance: Meaning, nature, scope and importance, difference between private and public finance. Principle of maximum social advantage.Role of state in public finance. Elementary theory of product and factor taxation.
Sources of revenue: taxes, loans, grants and aid – meaning and types, Principle of public expenditure. Public finance and the economic system.

Unit 2: Current Issues in Indian Tax System (12hours)

Direct and Indirect Tax Reform in India, Different forms of direct tax in India,
Changing regime of taxation-direct to indirect taxation.
Introduction of GST and its implication for state finances and fiscal federalism in India,
Latest finance commission and its recommendation for fiscal devolution.

Unit 3: Center State Financial Relations (9hours)

Center state fiscal relations, horizontal and vertical tax devolution in India,

State and local finance in India.
Performance and Equity debate in fiscal devolution in India.
Report of finance commission in post liberalisation period.

Unit 4: Principles of Taxation (12 hours)

Canons of taxation, Meaning of Canons of Taxation -Types of Canons of Taxation-Canon of equality or equity, Canon of certainty, Canon of economy, Canon of productivity, Canon of Diversity, Canon of convenience, Canon of elasticity, Canon of simplicity, Canon of diversity, Characteristics of Canons of Taxation.

Essential/recommended readings

1Musgrave, R. A. and Musgrave, P.B., Public Finance in Theory and Practice (1989), 5th edition. McGraw Hill Education.

2. Bagchi, Amaresh. Reading in Public Finance, Oxford University Press.
3. Bhatia H.L.. Public Finance. Vikas Publishing House;
4. Shankar Acharya, Thirty years of Tax Reforms in India, EPW, May 2005
5. Rao, M. Govinda, "Central transfers to states in India: rewarding performance while ensuring equity." Final report submitted to NITI Aayog (2017) (pages 1 to 18).
6. Government of India, Fifteenth Finance Commission Report 2021-26, Chapter 6

Suggestive readings

1. Report of Finance commission of India, Various years.
2. Economic Survey, GoI, Various year
3. State Finances: - A Study of Budget, RBI, Latest report

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 4 (DSE-4): ADVERTISING MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Advertising Management (DSE 4)	4	3	1	0	Class 12	None

Learning Objectives

To provide students with an understanding of:

- Fundamentals of advertising.
- Planning advertisements to target audience needs using product benefits and product characteristics.
- Crafting an effective creative brief to direct the approach to an advertising campaign.
- Various types of advertising media.

Learning outcomes

By studying this course, the students will be able to:

· Understand the role played by advertising agencies.

· Recognise and identify the facet model objectives in any advertisement.

· Conduct situation analysis and consumer insight mining.

· Learn creative execution strategies including application of appeals, layouts and creative copywriting.

· Understand and conduct appropriate media mix selection.

SYLLABUS OF DSE-4

Unit 1: Foundations of Advertising **(12 hours)**

Concept of advertising, Types of advertising, Concept of IMC, Role and functions of Advertising, the key players, functions of advertising agencies, Organisation of agency, Advertising appropriateness- factors influencing advertising budgets, methods of setting advertising budgets.

Unit 2: Planning and Strategy **(12hours)**

Planning Framework-marketing and advertising plan, Facet model of objectives (Perception, Cognition, Affect, Association, Action), DAGMAR, Marketing strategy and situation analysis, consumer insight mining, big idea, positioning for advertising campaigns.

Unit 3: Effective Advertising Execution **(12hours)**

The creative and message strategy, creative brief, themes and appeals, execution styles, message format, message tone, copywriting creativity, body copy, visual layouts, evaluation of effectiveness, pre-testing, post-testing.

Unit 4: Effective Advertising Media (9hours)

Types of media, newer media options, media objectives, developing a media plan, media Plan budget, media mix selection.

Essential/recommended readings

1. Belch,G.E., Michael, A., Keyoor, Purani. Advertising and Promotion-An Integrated Maketing Communications. 12th edition. Tata McGraw Hill Education. 2021.
2. William Wells, Sandra Moriarty, and John Burnett. Advertising: Principles and Practice. Prenctice Hall of India. 2007.
3. Jethwaney, Jaishri., Jain, Shruti. Advertising Management. Oxford University press.
4. Shah, Kruti. Advertising and Integrated Marketing Communications. McGraw Hill Education India. 2014.
5. Aaker, David A., Batra, Rajeev., Myers, John G. Advertising Management. Pearson Education. 2006.
6. Shimp, T.A. .Advertising and Promotion: An IMC Approach. Cengage. 2013.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 4 (DSE-4): INTERNATIONAL FINANCIAL MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
International Financial Management (DSE 6)	4	3	1	0	Class XII	None

Learning Objectives

This course aims at inculcating an understanding of:

- Key features of international finance and foreign exchange markets.
- Theories of International finance that link exchange rates with interest rates and inflation rates in different countries.
- Evolution of exchange rate system in the international financial markets.
- Determination of exchange rate, types of foreign exchange risks and risk management strategies.

Learning outcomes

By studying this course, the students will be able to:

- Gain substantive knowledge of International Financial Management.
- Understand the principles of trading in foreign exchange markets, different instruments traded, risks involved and how to carry out hedging of currency risks.
- Learn how to compute forward rates using cross rates, computation of synthetic quotes and apply rules to determine existence of arbitrage amongst currencies traded.
- Understand how the international markets have evolved and the alternate exchange rate systems world has seen over the years

SYLLABUS OF DSE-6

Unit 1: Introduction To Currency Markets (12 hours)

Spot &Forex market: Introduction and Features, Participants, & their method of communication in forex markets, SWIFT and CHIPS. Currency Quotes and types, Calculation of forward rates using spot rates, Discount/Premium on spot rate, Swap Points and Outright Forward Rates, Forward Rate vs. Expected Future spot rates, Spot rate with and without transaction costs, Payoff Profiles on Forward Exchange, Currency futures and

Pay of Profiles, Mark to Market, Cross Rates & Synthetic quotes. Arbitrage: one point, two point and three point (triangular) arbitrage.

Unit 2: Parity Conditions in Currency Markets (12 hours)
Purchasing Power Parity (both absolute and relative versions), Interest Rate Parity (explanation of borrowing and lending criteria, diagrammatic presentation) , covered interest rate parity, International Fischer Effect. The linkages between parity conditions.

Unit 3: Alternate Exchange Rate Systems and Payment Terms (9 hours)

Gold Standard and Gold Exchange Standard System with price adjustment mechanism , EMS and its price adjustment, Hybrid systems , Fixed vs Flexible System, Overview on Brettonwoods System, IMF, SDR, Triffon Paradox & Smithsonian Agreement. Payment Terms and Methods of Financing International Trade (Letter of Credit, Forfaiting, Factoring, Credit Lines)

Unit 4: Exchange Rate Determination and Exposures (12 hours)

Currency Demand and Supply Curves, Stability of exchange rates and 'J' Curve Effect, Factors Affecting Exchange Rate, Foreign Exchange Exposure: Nature, Definition, Exposure Line and Interpretating Exposure, Statistical Measurement of Exposure, Types of Exposure (Meaning): Transaction, Economic and Translation Exposure, Hedging Strategies to Manage Transaction Exposures. Currency Swaps.

Essential/recommended readings

1. Apte, P G., Multinational Financial Management.Tata-McGraw Hill. New Delhi.
2. Levi, Maurice. International Finance. McGraw Hill Inc. New York.
3. Madura, Jeff. International Financial Management.South Western Cengage Learning.
4. Seth, A.K., International Financial Management. Galgotia Publishing Company. New Delhi.
5. Shapiro, Allen C., Multinational Financial Management. Prentice Hall India Pvt Ltd. New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVE COURSES OFFERED BY THE DEPARTMENTS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

GENERIC ELECTIVES (GE-2): INTRODUCTION TO DIGITAL MARKETING

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Digital Marketing (GE - 2)	4	3	1	0	Class 12	None

Learning Objectives

This course aims to acquaint the students with:

- Key marketing principles and terminology.
- Evolving digital landscape and the strategic role of digital marketing processes and tools in designing the overall Marketing strategy.
- Methodologies, tools and technologies involved in digital marketing.
- Importance of search engines and their role in digital marketing ecosystem.

Learning outcomes

By studying this course, students will be able to:

- Understand the concept of digital marketing and its integration with traditional marketing.
- Understand customer value journey in digital context and behaviour of online consumers.
- Learn email, content and social media marketing and apply the learnings to create digital media campaigns.
- Examine various tactics for enhancing a website's position and ranking with search engines and search advertising.

SYLLABUS OF GE-2

Unit 1: Fundamentals of Marketing **(6hours)**

Importance of marketing; Core marketing Concepts; Company Orientations; Concept of Segmentation, Targeting-Positioning; 7 P's Framework; Product Life cycle; Pricing strategies, Types of distribution channels; Promotion Mix.

Unit 2: Marketing in the Digital World **(9 hours)**

Digital marketing: Concept, Features, Difference between traditional and digital marketing, Moving from traditional to digital Marketing; Digital Marketing Channels: Intent Based- SEO, Search Advertising; Brand Based- Display Advertising; Community Based-SMM; Others- Affiliate, Email, Content, Mobile; Customer Value Journey: 5As Framework; The Ozone O_3 Concept Key; Traits of online consumer.

Unit 3: Content, Email and Social Media Marketing (15 hours)

Content Marketing: Developing a content marketing strategy; Email Marketing: Types of Emails in email marketing, Email Marketing best practices; Social Media Marketing: Building Successful Social Media strategy; Social Media Marketing Channels; Facebook, LinkedIn, YouTube (Concepts and strategies)

Unit 4: Search Marketing (15 hours)

Introduction of SEM: Working of Search Engine; SERP Positioning; Search Engine Optimization: Overview of SEO Process; Goal Setting-Types

On-Page Optimization: Keyword Research, SEO Process -Site Structure, Content, Technical Mechanics, Headings, Image & Alt text, Social Sharing, Sitemaps, Technical Aspects-Compatibility, Structured Data Markup.

Off Page Optimization: Link Formats, Link Building, Content Marketing, Social Sharing; Black and White Hat Techniques

Search Advertising: Overview of PPC Process; Benefits of Paid Search; Basis of Ranking; Goal Setting-Objectives; Account Setting-Creation of Google Ads, Campaign architecture, Campaign setup, Targeting, Bid Strategy, Delivery, Ad Scheduling, Ad Rotation, Keyword Selection; Ad Copy composition, Ad Extension

Overview of Display Advertising: Working of Display Advertising; Benefits and challenges.

Essential/recommended readings

1. Dodson, I. (2016). The art of digital marketing: the definitive guide to creating strategic, targeted, and measurable online campaigns. John Wiley & Sons.
2. Kartajaya, H., Kotler, P., &Setiawan, I. (2016). Marketing 4.0: moving from traditional to digital. John Wiley & Sons.
3. Ryan, Damien. Understanding Digital Marketing - Marketing Strategies for Engaging the Digital Generation. Kogan Page Limited.

Additional References:

1. Kotler, P. (2009). Marketing management: A South Asian perspective. Pearson Education, India.
2. Maity, Moutusy. Internet Marketing: A practical approach in the Indian Context. Oxford Publishing.
3. Gupta, Seema. Digital Marketing. McGraw Hill
4. Ultimate guide to digital Marketing. Digital Marketer

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4): STATISTICS FOR BUSINESS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Statistics for Business (GE-4)	4	3	0	1	Class 12	Mathematics at Class 12

Learning Objectives

The objective of this course is to enable students to:

- Describe data using summary statistics.
- Develop detailed understanding of discrete and continuous distributions.
- Develop skills in statistical computing, statistical reasoning and inferential methods.
- Comprehend and analyse real data like real indices.

Learning outcomes

By studying this course, students will be able to:

- Learn tools and concepts of statistical analysis and interpretation.
- Comprehend fundamentals of probability theory.
- conduct statistical computing, statistical reasoning and use inferential methods.
- Comprehend and analyse real data like real indices.

SYLLABUS OF GE-4

Unit 1: Descriptive Statistics and Exploratory Data Analysis (12hours)

Types of Variables (Quantitative, Qualitative, discrete, continuous), Scales of Data Measurement (nominal, ordinal, Interval & Ratio), Variable-; Primary & secondary Data.

Frequency distributions, Relative Frequency, Cumulative Distributions, Percentiles, Quartiles; Graphical representation of data- bar charts, pie, histograms, box plots.

Univariate Measures Mean, median, mode, Geometric Mean, Harmonic Mean, Weighted Mean & their properties. Selection of a measure of central tendency. Range, inter-quartile range, quartile deviation, mean deviation, standard deviation, variance, coefficient of variance, properties of standard deviation, merits & demerits. Skewness and Kurtosis: Meaning, measures- Karl Pearson, Bowley, Kelly's, Kurtosis- meaning, Moments, Kurtosis

Bivariate Analysis: Cross-tabulations and Scatter diagram; Correlation, Association and linear regressions

Unit 2: Probability and Distributions (12 hours)

Axioms of probability; Review of counting rules, experiments, sample space, simple and complex events; Addition and multiplication rules; Concepts of Mutually exclusive events, independent events; Concepts of Joint, marginal and conditional probability; Permutation and Combinations

Concept of Discrete and continuous Random Variables; Expected value and variance; Examples of Theoretical Discrete and Continuous Probability Distributions – Binomial, Poisson and Normal distributions.

Unit 3: Sampling, Estimation and Hypotheses (15 hours)

Sample Statistics versus population parameters; Definition and Statistical properties of a Random Sample; Point and Interval Estimation and Small Sample Properties of Estimators (unbiasedness, efficiency); Central Limit Theorem. (Interval estimation for mean for large samples)

Basic concepts of Hypotheses Testing: Formulation of Null and Alternate Hypotheses; One-tailed and two-tailed Tests about population Mean; Concepts of Type I and Type II errors. (Hypothesis testing for mean and difference between mean for large samples only)

Unit 4: Index Numbers (6hours)

Index Numbers: Use and construction of Laspeyres and Paasche indexes; Fixed and chain base index numbers; Construction of real indexes: Consumer Price Index and BSE index.

Practical component (30 hours) - Practicals to be based on a spreadsheet package (Microsoft Excel or equivalent) to enable students to execute all the measures and tests taken up in the theory classes in the course.

Essential/recommended readings

1. Spiegel, M.R.(2003). Theory & Problems of Statistics, Schaum's outline series, McGraw Hill.
2. Levin, Richard I. and Rubin, David (1998). Statistics for Management (7th Edition), Pearson.
3. Gupta, S.C. (2018). Fundamentals of Statistics, Himalaya Publishing House
4. Spiegel, M. and Stephens, Larry (2017). Statistics (Schaum's Outline Series), Tata-Mcgraw-Hill, New Delhi

Suggestive readings

1. Nagar, A. L. and Das. R. K.. Basic Statistics (2nd Edition), Oxford University Press
2. Karmel, P. H. and Polasek, M. (1978). Applied Statistics for Economists (4th edition), Pitman.
3. Larsen, Richard J. and Marx, Morris L. (2011). An Introduction to Mathematical Statistics and its Applications. Prentice Hall.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6): INTRODUCTION TO FINANCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Finance (GE-6)	4	3	1	0	Class 12	None

Learning Objectives

This course aims at providing a comprehensive introduction to:

- Financial system and its primary constituents.
- Sources of finance and time value of money.
- Basics of Investment and various asset classes.
- Key concepts of international financial management.

Learning outcomes

By studying this course, students will be able to:

- Understand the meaning, scope and sources of Finance
- Estimate the present and future values of assets
- Examine the relationship between risk and return, and the nature and sources of risk in a stock market context
- Analyse the currency exchange market to deal exchange rate risk.

SYLLABUS OF GE-6

UNIT – I: A Primer on Financial Markets & Institutions (9hours)

An overview of financial system: characteristics & requirements. Components & functions of financial system. Financial markets: characteristics & types. Types & role of Financial Institutions. An overview of the 2007–2008 Financial Crisis.

Unit 2: Corporate Finance: An Overview (12hours)

Nature, scope and objectives of Finance, Emerging role of Finance Managers in India and Agency problem.Concept & Meaning of Financial Management, goals of financial management, the three financial decisions- Investing, Financing & Dividend.

Sources of Finance: Equity & Preference Capital, Retained earnings, Debt, Bonds, Long term loans, Short term advances from banks, public deposits & advances from customers and trade creditors.

Concept of Time Value of Money, Compound Value, Present Value, Annuity and Perpetuity.

Unit 3: Investment Management: Basics & Process (15 hours)

An overview of investment- Investment process, Types of assets- real & financial.Types of investors, types of financial securities & attributes of a good investment.

Concept of Risk & Return (Single asset), risk-return trade off, types of risk- systematic & unsystematic, types of return-holding period return, expected return, actual return.
Examining four broad asset classes: equity, bonds, mutual funds & derivatives.
Equity- three schools of thought on equity valuation- a brief discussion on fundamental analysis, technical analysis and efficient market hypothesis.
Bonds- types, fundamentals, relationship between interest rates & bond prices& yield curve.
Mutual Funds– meaning, importance, structure, mutual fund schemes, Systematic Investment Plan (SIP), Systematic Withdrawal Plan (SWP), Exchange Traded Fund (ETF), Equity Linked Savings Scheme (ELSS) and NAV of Fund.
Derivatives – Meaning and Types of Derivative Instruments (Forwards, Futures, Options and Swaps).
Concept of diversification & portfolios. Portfolio Risk &Return(two security only).

Unit 4: A Beginners' Guide to International Finance (9hours)
International Monetary System- development of international finance and how the international monetary system evolved. Currency exchange markets and rates- currency exchange markets, exchange rate quotations, currency exchange rate appreciation and, depreciation, factors that affect currency exchange rates and arbitrage. Conducting business internationally. Concept of exchange rate risk.

Essential/recommended readings

1. Bodie, Zvi., Kane, Alex and Marcus, Alan J.. Investments. McGraw Hill.
2. Chandra, P.. Security Analysis and Portfolio Management. Tata McGraw Hill.
3. Pathak, Bharati. Indian Financial System. Pearson.
4. Ronald, W. Melicher and Norton, Edgar A.. Introduction to Finance: Financial Markets, Investment, and Financial Management. Wiley Publishing House. 2012.
5. Rustagi, R.P., Fundamentals of Financial Management. Taxmann.

Suggestive readings

1. Khan, M. Y & Jain P. K., Financial Management: Text and Problems. Tata McGraw Hill. New Delhi.
2. Kohn, Meir. Financial Institutions and Markets. Oxford University Press.
3. Kidwell, David S., Backwell, David W., Whidbee, David A. and Sias, Richard W. Financial Institutions, Markets and Money. Wiley Publications.
4. Madura, Jeff. Financial Markets and Institutions. South Western Cengage Learning.
5. Reilly, Frank K, and Brown, Keith C. Investment Analysis and Portfolio Management. Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-8): ENVIRONMENTAL ECONOMICS AND

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Environmental Economics and Climate Change (GE-8)	4	3	1	0	Class 12	None

Learning Objectives

This course aims at inculcating an understanding of:

- How economic activities are affecting the environment.
- Social value of environmental resources.
- Climate change and its consequences.
- Efficient and effective policy measures for protecting the environment.

Learning outcomes

By studying this course, students will be able to:

. · Understand the linkage between environment and economics.

· Learn the basic theories of environmental economics.

· Understand the basic terminologies related to environment and Climate change.

· Analyse the effects of climate change on India and its future plan for environmental protection and mitigation.

SYLLABUS OF GE-8

UNIT – I: Introduction **(8 hours)**

Introduction to Environmental Economics, Material Balance model- economy environmental interactions, reasons for environmental degradation (population, technology, GDP), balance between environment and growth.

Unit 2: Economic Growth and Environmental Degradation **(10 hours)**

Theories of relationship between economic growth and environmental degradation: The environmental Kuznets curve hypothesis, The Brundtland Curve hypothesis, The environment Daly Curve hypothesis.

Unit 3: Climate Change and its Challenges **(15 hours)**

Introduction to the Climate Change, Drivers of Climate Change, Global impacts of Climate Change: Anthropogenic, Global warming, ozone hole, biodiversity loss, ecosystem services, natural capital and resources. Effect of Climate Change on India: Agriculture, Biodiversity, vulnerability of Coastal Belt, Rural Livelihoods and Food Security in India.

Unit 4: Actions Taken and Policy Framework (12 hours)

Global Level: Adaptation and Mitigation, Governmental and Intergovernmental Actions to Combat Climate Change: The Role of the Intergovernmental Panel on Climate Change (IPCC), United Nations Framework Convention on Climate Change, The Kyoto Protocol, Paris Agreement etc. The global carbon market (CDM, JI, ET).India's Position on International Climate Negotiations, India's National Action Plan on Climate Change.

Essential/recommended readings

1. Callen,Thomas (2007). Environmental Economics, Thomson Learning Inc. Indian Edition.
2. Dubash, Navroz (2012). Handbook of Climate Change and India: Development, Politics and Governance, Earthscan
3. Bhattacharya, R. N. (ed.) (2001). Environmental Economics, An Indian Perspective, Oxford University Press.

Suggestive readings

1. Romm, J.J. 2018. Climate change: What Everyone Needs to Know. Oxford University Press
2. Dash. S.K. 2008. Climate Change, Cambridge University Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Annexure-1

Based on Undergraduate Curriculum Framework 2022

UNIVERSITY OF DELHI

UNDERGRADUATE PROGRAMMES OF STUDY

STRUCTURE, COURSES & SYLLABI OF SEMESTER VIII

SEMESTER -V

B.A. (HONOURS) BUSINESS ECONOMICS

SEMESTER -V

B.A. (Hons) BUSINESS ECONOMICS

DISCIPLINE SPECIFIC CORE COURSE – 13 (DSC-13): BASIC ECONOMETRICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Basic Econometrics (DSC 13)	4	3	0	1	Class 12	Maths at Class XII level

Learning Objectives

The course aims to:

- To introduce classical and functional forms of linear Regression Model.
- To make statements or hypothesis that are mostly qualitative in nature in multi regression model
- To understand interaction between quantitative and qualitative variables and Use of dummy variables.
- To apply multicollinearity, heteroscedasticity, autocorrelation and specification errors, its detection and corrective measures.

Learning outcomes

By studying this course, the students will be able to:

. To explain key econometric concepts.

· Formulate simple econometric models

· Interpret the regression results obtained from software packages.

· Identify the errors in regression models and rectify the same.

· Analyse the suitability of the data for solving the problem at hand

SYLLABUS OF DSC-13

UNIT–I: The Classical Linear Regression Model [18hours]

Types of Data: Time Series, Cross Section and Panel Data. Concept of Population Regression Function and Sample Regression Function, Assumptions of the model, Derivation of Coefficients of Regression in a two-variable model, Estimation of the SRF using OLS, Analysis of variance and R squared.

Expectation and standard errors of the regression coefficients and the error term. Gauss Markov Theorem. Interval estimation and tests on population regression coefficients, variance of population disturbance term and forecasts. Testing the significance of the model as a whole. Testing the normality assumption.
Extensions of the Two Variable Linear Regression Model: Regressions through the origin, Scaling of Variables and Regression on Standardized Variables. Functional forms of Linear Regression Models: The double log, semi-log, reciprocal, log- reciprocal models with applications.

Unit 2: Multiple Regression Model [12hours]

Coefficients of regression in a multi variable model and their properties. Interval estimation, tests on population regression coefficients and model significance. Correlations, Goodness of fit and the Adjusted R square. Hypothesis testing for significance of the contribution of a variable, structural stability, restricted least squares.

Unit 3: Dummy Variable Regression Models [6hours]

Intercept, Slope Dummy variables. Interaction between qualitative variables. Interaction between quantitative and qualitative variables. Use of dummy variables in testing for structural change and for seasonal indices.

Unit 4: Relaxing the Assumptions [9hours]

Introduction to multicollinearity, heteroscedasticity, autocorrelation and specification errors. The nature of the problem, its detection and corrective measures.

Practical Component (30 hours) : Practicals to be based on an econometric software (e.g., Gretl/SPSS/PSPP). The student is expected to implement using the software, all the regressions and tests noted in the syllabus. An econometric project to be taken up ans assessed as part of the practical internal assessment.

Essential/recommended readings

1. Gujarati, D. and Sangeetha, N. (2007) Basic Econometrics. Fourth Edition, Tata McGraw-Hill, New Delhi
2. Dougherty, Christopher. (2011). "Introduction to Econometrics," Oxford University Press,
3. Wooldridge, J. M. (2006). Introductory Econometrics: A modern approach. Mason, OH: Thomson/South-Western.

Suggested readings

1. Asteriou, D., & Hall, S. G. (2011). Applied econometrics. Palgrave Macmillan.
2. Brooks. Chris.(2008) Introductory Econometrics for Finance, Second Edition Cambridge University Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 14 (DSC-14): ORGANISATIONAL BEHAVIOUR

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Organisational Behaviour (DSC 14)	4	3	1	0	Class 12	None

Learning Objectives

This course aims at:

- To explain core concepts of organizational behaviour
- To apply motivation theories and analysis of interpersonal relationships
- To apply leadership theories to understand leadership traits and issues
- To manage conflict and enhance well being at workplace

Learning outcomes

By studying this course, the students will able to:

· Understand the importance of organizational behaviour as a field of study.

· Understand the role of perception, personality and learning in explaining Individual behaviour and to Apply different motivational theories and leadership styles to increase the productivity and job satisfaction of employees.

· Understand the foundations of group behaviour and the framework for organizational change and development.

· Identify methods to enhance individual and Organizational wellbeing and resolve organizational problems.

SYLLABUS OF DSC-14

UNIT – I: Core Concepts in Organisational Behaviour (12hours)

Conceptual Foundations and Importance of organizational behaviour. Perception and Attribution: Concept, Factors affecting Perception, Attribution theory, Perceptual Organization and Errors in Perception. Personality: Concept, Factors affecting personality and Theories. Learning: Concept and Theories of Learning, Concept of Reinforcement, Schedules of Reinforcement.

Unit 2: Motivation, Interpersonal Relations and Change Management(12hours)

Motivation: Concepts and their application, Content theories (Maslow, McClelland and Herzberg's Theories); Process theories (Expectancy theory, Equity theory). Analysis of

Interpersonal Relationship: Transactional Analysis, Johari Window. Organisational Change: Concept, Resistance to change, managing resistance to change, Kurt Lewin Theory of Change.

Unit 3: Leadership and Group Processes (9 hours)

Leadership: Trait Approach, Behavioural theories (Ohio and Michigan State Studies, and Blake & Mouton's Managerial grid), and Contingency theories (Fiedler's Contingency Model, Hersey & Blanchard's Situational Leadership Model) Contemporary Leadership issues: Charismatic, Transactional and Transformational Leadership. Groups and Teams: Definition, Stages of Group Development, Group Processes-Group Cohesiveness, Group Think, Group Shift.

Unit 4: Managing Conflict and Enhancing Wellbeing (12 hours)

Organisational Power and Politics: Concept, Sources of Power, Tactics to gain power in Organizations. Nature of organisational politics. Conflict: Concept, Sources, Types, Stages of conflict, Management of conflict. Well-being at Work: Importance and Impact of employee emotions and emotional intelligence in organisations. Work stress and its management.

Essential/recommended readings

1. Stephen P. Robbins, T. A. Organisational Behavior. Pearson.
2. Aswathappa, K., & Reddy, G. S. Organisational behaviour (Vol. 20). Mumbai: Himalaya Publishing House.
3. Luthans, Fred, Organisational Behaviour, Tata Mc Graw Hill.
4. Singh, Kavita, Organisational Behaviour, Pearson.
5. Greenberg Jerald and Baron Robert, A. Behavior in Organisations: Understanding and Managing Human side of work. Prentice Hall of India

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 15 (DSC-15): INDUSTRIAL ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Industrial Economics (DSC 15)	4	3	1	0	Class 12	None

Learning Objectives

The course aims to:

- To understand basics of industrial economics and its scope
- To understand concept and theories of market structure.
- To analyse issues related to market conduct like Entry and Exit Barriers, Pricing Behavior, Research and Innovation, Mergers and Acquisitions and Legal Tactics.
- To explore the role of public policy in Indian industries

Learning outcomes

By studying this course, students will be able to:

· Enable the student to understand how the Industries Function in the real world

· Understand what is market concentration and how does it affect market power

· Know how different strategies are used, under the structure-conduct-performance paradigm, by the firms to maximize their market power.

· Know the importance of regulatory public policy in oligopolistic market, in order to ensure maximum consumer welfare.

SYLLABUS OF DSC-9

UNIT – I: Structure- Conduct- Performance Paradigm (12 weeks)

Basic understanding of Industrial Economics, Scope of Industrial Economics, Structure-Conduct- Performance Model, Different School of Thoughts, Theory of Firm and basic conditions of Demand and Cost.

Unit 2: Market Structure and Concentration (12hours)

What is Market Concentration, Theories of Measurement of Concentration, Deterministic and Stochastic Approach, Lerner and Herfindahl Index, Product Differentiation, Horizontal, Vertical and Conglomerate Mergers, Vertical Integration.

Unit 3: Market Conduct (12hours)

Entry and Exit Barriers, Pricing Behavior, Advertising, Product Strategy, Research and Innovation, Mergers and Acquisitions, Legal Tactics.

Unit 4: Public Policy and Indian Industries (9hours)

Role and Importance of Industry Regulation, Regulation of Natural Monopoly, Antitrust Legislations and Indian Industries, Social Concerns and Advertising.

Essential/recommended readings

1. Cabral Luis M.B. (2017). Introduction to Industrial Organization. 2ndEdn. Cambridge, MA: MIT Press
2. Carlton, D.W. and J. M. Perloff. (2005). Modern Industrial Organization. Pearson
3. Shy, Oz. (1996). Industrial Organization: Theory and Applications. The MIT Press.
4. Waldman D.E. and E. J. Jensen. (2019). Industrial Organization: Theory and Practice.

Suggestive readings

1. Tremblay, Victor J., and Carol Horton Tremblay. (2012), "New Perspectives on Industrial Organization", New York: Springer.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 1 (DSE-1): INCOME TAX LAW AND PRACTICE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Income Tax Law and Practice (DSE1)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at

- Introducing basic definitions in Income Tax Act
- Computing taxable income under the heads Salaries and House Property
- Calculate Profits and Gains of Business or Profession, Capital Gains and Income from other sources
- Understand deductions from gross taxable income and filling of returns.

Learning outcomes

By studying this course, the students will be able to:

- Understand the Process of determination of taxable income
- Apply the deductions to taxable income as per the latest provisions of Income-tax Act, 1961
- Acquire the skill of Filling Basic Returns of Income Tax

SYLLABUS OF DSE-1

Unit 1: Introductory Concepts (3 hours)

Permanent Account Number (PAN), Assessment Year, Previous Year, Person, Assessee, Gross Total Income, Total income and its computation, Tax Rates, Residential status; Relationship between Residential Status and Incidence of Tax. Incomes Exempted under section 10.

Unit 2: Computation for "Salaries" and "Income from House Property" (15 hours)

Income under the head "Salaries": Meaning of Salary, basis of charge, Allowances, Perquisites, permissible deductions from salary income, Deduction under Section 80 C.

Income under the head "Income from House Property": Basis of charge, income from let out house property, income from self-occupied property.

Unit 3: Computation for 'Profits and Gains of Business or Profession', 'Capital Gains' and 'Income from other sources' (15 hours)

Profits and gains of business or profession: Basis of charge, important rules regarding assessment of PGBP, computation of Profits from Business or Profession, deductions expressly allowed, expenses expressly disallowed.

Capital gains: basis of charge, meaning of capital asset, cost of acquisition, improvement and indexation, exemptions for capital gains arising from transfer of Capital Assets, calculation of tax on short-term and long-term capital gains.

Income from other sources: basis of charge, dividend, winnings from lotteries, crossword puzzles, etc., interest on securities, advance money received for transfer of a capital asset, permissible deductions.

Unit 4: Computation of Total Income and Tax Liability (12 hours)

Computation of total income; Deductions from gross total income under section 80 C to 80 U; Rebates and reliefs; Set-off and carry forward of losses (Concept only), Concept of advance payment of Tax and Deduction of Tax at Source. Computation of Taxable Income and liability of Tax. e-Filing of Returns: ITR-1 (SAHAJ) and ITR-2

Essential/recommended readings

1. Ahuja, G. and Gupta, R. Simplified Approach to Income Tax. Flair Publications (P) Ltd.
2. Singhania, V.K. and Singhania, M. Students Guide to Income Tax. Taxmann Publications (P) Ltd.

Software which will be used for teaching are

1. 'Excel Utility' available at incometaxindiaefiling.gov.in
2. Vinod Kumar Singhania, e-filing of Income Tax Returns and Computation of Tax Taxmann Publication (P) Ltd, New Delhi. (Latest version)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 3 (DSE-3): ENTREPRENEURSHIP

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Entrepreneurship (DSE 3)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at:

- To introduce the concept of entrepreneurship and its role in the economy
- To launch an Entrepreneurial Venture and writing a business plan
- To identify and explore legal and financial requirements of a business
- To understand the role and creativity in sustainable Business

Learning outcomes

By studying this course, the students will be able to:

· Develop critical thinking, problem solving skills and entrepreneurial mind-set in students.

· Enhance the understanding of the entrepreneurial process from idea generation, to concept development and creation of the venture.

· Enable the understanding of the business models, legal aspects of enterprise and writing a business plan.

· Apprise students with ways to finance and scale up the business.

SYLLABUS OF DSE-2

Unit 1: Introduction to Entrepreneurship (9 hours)

Concept of Entrepreneurship; Attributes of Entrepreneur; Distinction between entrepreneur and manager; Concept of corporate entrepreneurship/ intrapreneurship; Concept of social entrepreneurship; Role of entrepreneurship for an economy; Understanding business model strategy; Legal forms of enterprise; case study discussion on entrepreneurs, intrapreneurs, business models

Unit 2: Launching Entrepreneurial Venture (12 hours)

Identification of opportunities and Idea generation and screening methods- Brainstorming, mind-mapping, story-telling, SCAMPER, attribute listing, focus group interviews, customer

feedback; Feasibility studies- Marketing, Financial, Technical, Socio-economic Feasibility; Writing Business Plan

Unit 3: Legal and Financial Aspects (12 hours)

Legal requirements of business (Basic concept and relevance of patents, copyrights, and trademark); Financing- Start-up phase financing, growth stage financing, Maturity-phase financing; angel investment and venture capital, other forms of external financing; case study discussion on financing a venture

Unit 4: Sustaining and Scaling Up (12 hours)

Keeping the entrepreneurial spirit alive- Challenges and remedies, Role of creativity and innovation, Barriers to entrepreneurship, Concept of sustainability, Ethical Perspectives; Introducing Shared Innovation into the Business Model; Evolution of CSR from Compliance to Sustainable Entrepreneurship; How to Design CSR Strategies that Optimize Impact for Business and Society

Essential/recommended readings

1. Harvard Business Review Entrepreneur's Handbook: Everything You Need to Launch and Grow Your New Business
2. Hisrich, R. D. International entrepreneurship: starting, developing, and managing a global venture. Sage Publications.
3. Sharma, S., Starik, M., & Wuebker, R. Sustainability, innovation and entrepreneurship: introduction to the volume.

Additional References:

1. Blank, S., Andreessen, M., Hoffman, R., & Sahlman, W. A. (2018). HBR's 10 Must Reads on Entrepreneurship and Startups (featuring Bonus Article "Why the Lean Startup Changes Everything" by Steve Blank). Harvard Business Press.
2. Drucker, P. (2014). Innovation and entrepreneurship. Routledge.
3. Hisrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A.: Entrepreneurship, Tata McGraw Hill.
4. Kuratko, D.F., and Rao, T. V., Entrepreneurship: A South-Asian Perspective, Cengage.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 5 (DSE-5):
Investment and Portfolio Optimization

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Investment and Portfolio Optimization (DSE 5)	4	3	1	0	Class 12	None

Learning Objectives

This course aims at:

- Provides a broad overview of investment and risk associated with it
- Measurement and analysis of return and risk of an equity on the basis of fundamental and technical analysis
- Understand bond fundamentals and interest rate theories
- Construction, analysis and evaluation of a portfolio of securities.

Learning outcomes

By studying this course, the students will be able to:

· Provide a theoretical and practical background of investments valuation

· Do valuation of equity and debt instruments

· Analyse and manage the bond as well as equity portfolios in the real word.

· Understand how to measure the portfolio performances

SYLLABUS OF DSE-5

Unit 1: Basics of Investment (6 hours)

Investment alternatives and objectives, investment, gambling, speculation, introduction to risk – return trade off: types of risks, sources of risks, measures, analysis, determinants of required rates of return and relationship between risk and return. Types of returns: Holding Period Return (HPR) & Compound Annual Growth Rate (CAGR). Attributes of a good investment. Types of assets: Real Assets versus Financial Assets. Investment Process.

Unit 2: Analysis of Equity (12hours)

Measurement of return and risk of equity shares. Approaches to equity analysis, Fundamental Analysis- Economy, Industry, Company Analysis (EIC framework); Equity Valuation Models (DDM, P/E Ratio model and Free Cash Flow Valuation approach). Valuation based on other ratios-P/B ratio, Price to Sales ratio and Price to Cash flow ratio. Technical Analysis – Concept, market indicators and specific stock indicators.

Random Walk Theory & Efficient Market Hypothesis (EMH): Forms, empirical evidence and tests.

Unit 3: Analysis of Bonds (12hours)

Bond fundamentals, types of bonds & risks in bonds. Valuation of bonds. Bond yields-current yield and Yield-to-maturity (YTM). Bond price-yield relationship, analysis of risks in bonds-duration and modified duration. Theories of term structure-Expectations theory, Segmented markets theory and Liquidity Preference theory. Yield curve.

Unit 4: Portfolio Construction, Management and Evaluation (15hours)

Modern Portfolio theory: Diversification & portfolio risk, Harry Markowitz model, measurement of portfolio risk and return, measurement of co-movements in security returns, calculation of portfolio risk, efficient frontier and optimal risky portfolio. Riskless lending & borrowing and capital market line.
Capital Asset Pricing Model: Development of the CAPM, assumptions, beta and security market line. Sharpe's Single Index Model. Portfolio performance evaluation- Sharpe's index, Treynor's Index, Jensen's alpha, and Information ratio.
Note: Some case studies related to above topics are required to be discussed.

Essential/recommended readings

1. Bodie, Zvi., Kane Alex and Alan J. Marcus. Investments. McGraw Hill.
2. Chandra, P. Security Analysis and Portfolio Management. Tata McGraw Hill.
3. Francis. J.C. & Taylor, R.W. Theory and Problems of Investments. Schaum's Outline Series. TMH. New Delhi,
4. Fischer, Donald E. and Ronald J. Jordan. Security Analysis and Portfolio Management. PHI Learning.
5. Pandian, Punithavathy. Security Analysis and Portfolio Management. 2nd Edition. Vikas Publishing House. New Delhi
6. Reilly, Frank K, and Brown, Keith C. Investment Analysis and Portfolio Management. Cengage Learning.
7. Rustagi, R.P. Investment Management. Sultan Chand & Sons.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 7 (DSE-7): Monetary Economics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Monetary Economics (DSE 7)	4	3	1	0	Class 12	None

Learning Objectives

This course provides the student the knowledge of:
1. Forms of money and its measures and associated theories
2. Money and capital markets, Financial products, institutions and crises
3. Interest rates, their determination and associated theories
4. Structure and role of the banking system and its reforms
5. Monetary theory, monetary policy, its goals and current practice in India

Learning outcomes

By studying this course, the students will be able to:

- Develop a critical understanding of functioning of financial institutions, markets and instruments and how growth of the real economy is interspersed with financial innovation and crisis.
- Learn an important learning outcome relates to aspects with regard to banks and capital markets as they constitute significant components of a financial system.
- Develop an understanding of theory of monetary policy and how it is conducted in India by Reserve Bank of India.
- Develop some basic understanding of few current issues including demonetization, cryptocurrency and problems faced by the banking sector in their appropriate contexts.

SYLLABUS OF DSE-7

Unit 1: **(8 hours)**

Concept, functions and measurement, and Theories of Money Supply Determination, Demonetization and Cryptocurrency.

Unit 2: **(15 hours)**

Financial Institutions, Markets. Instruments and Financial innovation.
Role of Financial Markets and Institutions; problems of asymmetric information, adverse selection and moral hazard, financial crisis. Money and Capital Markets, Organization, Structure and Reforms in India: Role of Financial Derivatives and other Innovations.

Unit 3: **(8 hours)**
Interest rates Determination, Sources of interest rate differentials, Theories of Term Structure of Interest rates, Interest rates in India.

Unit 4: **(8 hours)**
Banking System, Balance Sheet and Portfolio Management, Indian Banking System, Changing role and Structure, Banking Sector Reforms.

Unit 5: **(6 hours)**
Central Banking and Monetary Policy, Functions, Balance Sheet, Goals, Targets (operating, intermediate and final), Indicators and instruments of monetary control, Tinbergen's theorem, Inflation targeting, monetary management, current monetary policy in India**.**

Essential/recommended readings

1. Fabozzi F Jet al(2009): Foundations of Financial Markets and Institutions, Pearson
2. MishkinF S , Eakins S G,Jayakumar T , Pattnaik R K (2017): Financial Markets and Institutions, Pearson.
3. Dua, P(2020), "Monetary Policy Framework in India", Indian Economic Review, Vol. 55, Issue 1, June 2020
4. Jadhav,Narender: Monetary Policy,Financial stability and Central Banking in India Macmillan,New Delhi,India
5. Kaul,Vivek(2020) Bad money: inside the NPA Mess and how does it threaten the Indian Banking System, Harper Collin Publisher India
6. Ghate, C., & Kletzer, K. M. (Eds.). (2016). Monetary policy in India: A modern macroeconomic perspective. Springer
7. Chibber, Ajay, Salman, Soz, Anees(2021) India's Financial Sector: A Whodunnit
8. EDs in Unshackling India. Haper Collins Publishers India.
9. Report of the Working Group: Money Supply Analytics and Methodology of Compilation, 1998 Annual Report; Master Circular - Prudential Norms on Capital Adequacy - Basel I Framework – 2011; RBI Bulletin; Report of Currency and Finance (latest).
10. Various publications of RBI and other agencies / institutions
11. Raghuram_Rajan_Committee_on_Financial_Sector_Reforms

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DISCIPLINE SPECIFIC ELECTIVE COURSE 9 (DSE-9): International Economics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
International Economics (DSE 9)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at:

- To explain ancient view of International trade and production and consumption gains from trade
- To analyse the working of H-O theory and new trade theory
- To understand the international trade policies and its impact on trade
- To Understand the functioning of WTO and its implications for India.

Learning outcomes

By studying this course, the students will be able to:

- Understand basic theories of International Trade and the terms used therein.
- Understand trade policies and instruments used to control international trade.
- Understand what is WTO and how does it affect international trade?
- Understand various concepts related to Regionalism and Integration and their importance.

SYLLABUS OF DSE-9

Unit 1: International Trade Theories (12 hours)

International trade as an Engine of Growth, Ancient view of International Trade, Theory of Mercantilism, Absolute Advantage theory, Comparative Advantage Theory, Opportunity cost theory of trade, Autarky Equilibrium, Production and Consumption Gains from Trade.

Unit 2: Modern Theories of Trade (12 hours)

Introduction, H-O theory- Assumptions, General Equilibrium framework, the working of H-O theory, Factor price equilibrium theorem, Income Distribution effects of H-O theory, Empirical implications of H-O theory, Leontief Paradox, Factor Intensity Reversal, New trade theories (Difference in technology, Economies of Scale and Monopolistic Competition and Trade)

Unit 3: International Trade Policies and Practices (12 hours)

Trade Policy Instruments, Tariffs Barriers, Import Tariff- It's effect and measurement, Non-Tariff Barriers- Import Quotas, Voluntary Export Restraints, Anti-Dumping, Economic Integrations, Regional groups – EU, NAFTA and SAARC/ ASEAN, Theory of Customs Union - Impact of customs union on trade- trade creation and diversion. Import Substitution and Export Promotion.

Unit 4: WTO and Trade (9 hours)

What is WTO, Objectives, Principles, Areas of Function of WTO, Role of WTO in trade, Foreign Trade Policy of India, The Sanitary and Phyto SanitaryAgreement (SPS) of WTO and Its Implications for India, India & World Trade Organization (WTO): WTO Agreement on Agriculture.

Essential/recommended readings

1. Salvatore, D. (Edition 2008) , International Economics, Pearson Education : New Delhi
2. Krugman Paul R. & Obstfeld M. (2013) : International Economics:- Theory and Policy (IXth Edition), Pearson Education , New Delhi.
3. Cherunilam Francis (1998) :International Economics (Vth Edition), McGraw Hill Education (India) Pvt Ltd.
4. WTO and its implications on Indian Agriculture, National Institute of Agricultural Extension Management (MANAGE), Hyderabad.

Additional References:

1. Appleyard Dennis R.; Cobb Steven; Field Alfred J. (2010). International Economics (Vth Edition), McGraw Hill Education (India) Pvt Ltd.
2. Thompson, Henry(2010): International Economics – Global markets and competition 2nd Edition Singapore; Hachensack, N.J: World Scientific.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 11 (DSE-11): Understanding Consumers

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Understanding Consumers (DSE 11)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at:

- To understand psyche of a consumer and his personality traits
- To apply theories to learn and predict consumer behaviour
- To learn culture role and dynamics of Family and Consumer socialization
- To analyse consumer decision making process and diffusion of innovation

Learning outcomes

By studying this course, the students will be able to:

- Understand personality theories and their applications to consumer psychology.
- Analyse consumer perception in advertising through psychology based theories of perception.
- Understand behavioural learning theories and consumer attitude formation in the context of advertisements.
- Understand the role of opinion leaders, family and culture in consumer decisions.
- Identify the use of consumer behaviour concepts in prevalent advertisements.

SYLLABUS OF DSE-11

Unit 1: Personality, Perception and Positioning (12 hours)

Freudian Theory, Neo-Freudian theory of personality; Personality traits; Anthropomorphism; Self-Perception; Sensory information, Absolute and differential thresholds; Perceptual Selection, Perceptual Organisation, Interpretation of cues and imagery, Risk perception; Positioning and Repositioning (including use of perceptual mapping).

Unit 2. Consumer Learning and Attitude (12hours)

Elements, Behavioural learning theories (Classical, Instrumental, Observational); Information processing; Cognitive learning theory, Consumer involvement and hemispheric lateralisation; Recognition and recall measures. Consumer attitude formation; Tri-

component attitude model; Attitudes motivational functions; Elaboration Likelihood Model; Cognitive dissonance and conflict resolution; Causality and attribution theory.

Unit 3. Persuasion, Social Setting and Culture (9hours)

Broadcasted versus Addressable messages, message structure, persuasive appeals; Credibility and persuasive power of reference groups, Opinion leaders (influencers), Word-of-mouth strategic applications
Family and consumer Socialization; family decision making and members' roles; Culture's role and dynamics; Learning Cultural Values; Measuring values; Core values.

Unit 4. Consumer Decision-Making and Diffusion of Innovations (12 hours)

Consumer decision making: need recognition, decision spectrum, pre-purchase search, evaluation, decision rules, rules and marketing strategy, incomplete information, post-purchase evaluation- brand loyalty, disconfirmation of expectations; Consumer gifting behaviour; Diffusion, Types of innovation, Features affecting adoption, Adoption process.

Essential/recommended readings

1. Schiffman, Leon G., Kanuk, Leslie Lazar.,Kumar, S. Ramesh. Consumer Behaviour. 12th ed. Pearson Publications.

Additional References:

1. Hawkins, Roger J., Best, Kenneth A., Coney. Consumer Behaviour: Building Marketing Startegy. Tata McgrawHill.
2. Solomon, Michael. Consumer Behaviour: Buying, Having and Being. 12th ed. Pearson Publications.
3. Nair, Suja. Consumer Behaviour in Indian Perspective. Himalaya Publications.
4. Kumar, S Ramesh. Conceptual Issues in Consumer Behaviour. Pearson Publication.
5. Sheth, Jagdish N., Mittal, Banwari. Customer Behaviour: A Managerial Perspective. Thomson Publication.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3): LEGAL ENVIRONMENT OF BUSINESS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Legal Environment of Business (GEC 3)	4	3	1	0	Class 12	None

Learning Objectives

The course intends:

- To familiarize the student with the concept and essentials of Indian Contract act which govern business for its efficient conduct and to apply them in real life situations.
- To explain the meaning, nature and incorporation of a company.
- To make students understand and apply the provisions of Sale of Goods Act and Consumer Protection Act.
- To recognize and articulate legal principles related to Limited Liability Partnership and Information Technology Act.

Learning outcomes

By studying this course, students will be able to:

- To understand the basic rules and provisions of Contract and Agreements.
- To know the provisions to Formation and functioning of company and LLP.
- To understand the significance and role of law of sale of goods act
- To have in- depth knowledge of Information Technology Act And legal framework of right to Privacy, Data Security and Data Protection.
- Apply the law correctly to different facts and in different contexts

SYLLABUS OF GEC-3

Unit 1: Indian Contract Act **(12 hours)**

Meaning and Essentials of a Contract; Valid, Void and Voidable Contract; Offer and Acceptance; Consideration; Capacity of Parties; Free Consent; Discharge of Contract and Remedies for Breach of a Contract.

Unit 2: Companies Act **(12 hours)**

Meaning and Nature of Company; Promotion and Incorporation of a Company; Memorandum of Association; Articles of Association; Misleading Prospectus and

remedies available to the parties; Board of Directors and their qualification, duties, powers. Company Meetings and Resolutions.

Unit 3: Sale of Goods Act and Consumer Protection Act (12 hours)

Essentials of a Contract of Sale; Sale and Agreement to Sell, Conditions and Warranties; Transfer of Title by Non-Owners; Doctrine of Caveat Emptor; Rights of Unpaid Seller.**Consumer Protection Act 2009**: Scope and Applicability of the Act. Rights of consumer. Procedure for complaints. Duties and power of Central Consumer Protection Authority.

Unit 4: Limited Liability Partnership Act and IT Act (9 hours)

Meaning and nature of LLP; LLP and Company; LLP Agreement, Partners and Designated Partners, Incorporation of LLP; Partners and their Relations, Extent and limitation of liability of LLP.

Information Technology Act 2000: Concept and role; Digital signature, Electronic governance, Attribution, Acknowledgement and dispatch of electronic records, Regulation of certifying authorities, Digital signatures certificates, Duties of subscribers, Penalties and adjudication, Appellate Tribunal , Offences.

Essential/recommended readings

1. Bansal, V & Arora, A. Corporate Laws. Vikas Publishing, House (P) Ltd. New Delhi.
2. Kuchhal M.C & Vivek K. Business Legislation for Management. VIKAS Publishing House (P) Ltd.
3. Kumar, A. Corporate Laws. International Book House (P) Ltd.
4. Bare Acts relating to the laws.

Suggestive readings

1. Chadha, R,. Chadha, S. Corporate Laws. Mayur Paperbacks. New Delhi.
2. Maheshwari & Maheshwari. Business Law. National Publishing House. New Delhi.
3. Singh, Avtar. The Principles of Mercantile Law. Eastern Book Company. Lucknow.
4. Tulsian, P.C. Business Law. Tata McGraw Hill. New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5): QUANTITATIVE TECHNIQUES IN

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Quantitative Techniques in Management (GEC 5)	4	3	1	0	Class 12	None

Learning Objectives

To apprise students:

- To understand the concepts, formulation and interpretation of linear programming methods and its application in diverse problems.
- To formulate and solve Transportation and Assignment problems
- To understand basic concept, construction of the Network diagram and Critical Path Analysis
- To introduce game theory and network analysis forms part of the course.

Learning outcomes

By studying this course, students will be able to:

- Identify and develop operational research models from the verbal description of the real system.
- Understand the mathematical tools that are needed to solve optimization problems.
- Develop critical thinking and use PERT and CPM techniques to improve decision making.

SYLLABUS OF GEC-5

UNIT – I: Introduction - Operations Research, Linear Programming (15 hours)

(i) Introduction to Operations Research, characteristics, Phases, Methodology, Applications and scope

(ii) Formulation of Linear Programming problems, Graphical Solutions (Special cases: Multiple optimal solution, infeasibility, unbounded solution); Simplex Method, Special cases, Big-M method and Two-phase method; Duality (emphasis on formulation & economic interpretation); Sensitivity Analysis. (Excel Solver application)

UNIT – II:Transportation and Assignment Problem (12 hours)

(i) Transportation Problem: Formulation, Solution by N.W. Corner Rule, Least Cost method, Vogel's Approximation Method (VAM), Modified Distribution Method; Special cases: Multiple Solutions, Maximization case, unbalanced case, prohibited routes.

(ii) Assignment Problem: Hungarian Method, Special cases: Multiple Solutions, Maximization case, Unbalanced case, Restrictions on assignment.

UNIT – III: Network Analysis (9 hours)

Basic Concept, Construction of the Network diagram, Critical Path Analysis, float and slack analysis (Total float, free float, independent float), probability consideration in PERT (Interface with Project Management open-source software)

UNIT – IV: Decision Theory (9 hours)

Decision making environment, Construction of Pay off Table, Opportunity Loss Table, Decision under uncertainty. Decision under Conflict: Game Theory, Two-person Zero-Sum games, Maximin Minimax Principle, Games without Saddle point - Mixed strategy, Dominance Rule.

Essential/recommended readings

1. Vohra, N.D., Quantitative Techniques in Management (5th ed.). Tata McGraw Hill
2. Swarup, K., Gupta, P.K. and Mohan, Man, Introduction to Management Science Operations Research (19th ed.). Sultan Chand & Sons.
3. Sharma, J.K., Operations Research: Theory and Applications (6th ed.). Trinity.
4. Taha, H.A., Operations Research: An Introduction (9th ed.). Pearson.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-7): ECONOMICS OF STARTUPS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Economics of Startups (GEC 7)	4	3	1	0	Class 12	None

Learning Objectives

To apprise students:

- To give an overview of startups and its types that would help students to understand basics of starting up new ventures.
- To build and create a successful Business Plan
- To understand various Business models and learn startups
- To familiarize with central and state level institutions supporting small business entreprises.

Learning outcomes

By studying this course, students will be able to:

. · Understand the process and working of a startup.

· Identify the different ways in which entrepreneurs manifest in start-ups.

· Know how to create one's own business venture and the various factors that influence successful set-up and sustainable operations.

· Explore the funding and other institutions supporting small business units.

SYLLABUS OF GEC-7

UNIT – I: Startup, Generation & Experimentation (9 hours)

Concept of Startup, Role of digital technologies, Startup ecosystems, the startup movement in India; Generating a value proposition, how valuable are new ideas, Design thinking principles; Experimenting with the prototype, Introduction to lean start-ups, Lean startup principles, Learning and failing fast.

UNIT – II: Building the Business Plan (15 hours)

Beginning Considerations: Building a competitive advantage. The strategic management processes. Conducting a feasibility analysis. Forms of Business ownership. Franchising and entrepreneurship. Buying an existing business, marketing and financial considerations: Building a powerful marketing plan. E-commerce and Entrepreneur. Pricing strategies. Creating a successful financial plan. Choosing the right location and layout.

UNIT – III: Crafting business models and Lean Start-ups (12 hours)

Introduction to business models; Creating value propositions-conventional industry logic, value innovation logic; customer focused innovation; building and analysing business models; Business model canvas, Business Pitching.

UNIT – IV: Institutions Supporting Small Business Enterprises and Ethics(9 hours)

Central level institutions. State level institutions. Other agencies. Industry Associations. Class exercise- discussions on current government schemes supporting entrepreneurship and finding out which scheme will most suit the business plan devised by the student. Importance of Ethical Entrepreneurship, value of ethics to an entrepreneur.

Essential/recommended readings

1. Scarborough, N. M., Cornwall, J. R., & Zimmerer, T. (2016). Essentials of entrepreneurship and small business management. Boston. Pearson Publications.
2. Hisrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A., Entrepreneurship, Tata McGraw Hill.
3. Shukla, M.B., Entrepreneurship and Small Business Management. Kitab Mahal Publishers.

Suggestive readings

1. Hishrich, R.D. and Peters, M. Entrepreneurship. Irwin Publications.
2. Barringer, B.R. and Ireland, R. Duane. Entrepreneurship: Successfully launching new ventures. (6th Edition) Pearson
3. Kuratko, D.F., and Rao, T.V., Entrepreneurship: A South-Asian Perspective. Cengage Publications.
4. Shankar, R., Entrepreneurship: Theory and Practice. Tata McGraw Hill.
5. Kathleen, R Allen. Launching New Ventures: An Entrepreneurial Approach. Cengage Learning.
6. Fisher, Steve and Duane, Ja-Nae. The Startup Equation - A Visual Guidebook for Building Your Startup. Mc Graw Hill Education India Pvt. Ltd.

Note: **Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

REGISTRAR

GENERIC ELECTIVES (GE-9): INTERNATIONAL ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
International Economics (GE9)	**4**	**3**	**1**	**0**	**Class XII**	**NA**

Learning Objectives

This course aims at inculcating:

- Basic understanding of fundamentals of international Trade
- An overview of theories of international trade
- Understand the meaning of Balance of Payment and explore the reasons of disequilibrium.
- Determine exchange rates and understand global capital market

Learning outcomes

By studying this course, students will be able to:

- To understand basic concept and origin of International economics through the prism of classical and new classical trade theories
- To understand different terms of trade and their applicability
- To differentiate between Modern and Classical Trade theories.
- To gain knowledge about the foreign exchange markets and its working
- To learn about global capital market

SYLLABUS OF GE-9

UNIT – I: Introduction to International Trade [12hours]

Globalization and its growing importance in the world economy; Impact of globalization; International business contrasted with domestic businesses; Cost and benefit analysis of tariff, Effective rate of protection and welfare arguments of tariff and developing countries. Foreign direct investment (FDI) in world economy: Trends, Direction, and flow of FDI; Theories of FDI; Political ideology and FDI.

Unit 2: International Trade Theory [15hours]

World Trade: An overview; Theories of international trade – Mercantilism; Absolute advantage theory, Comparative advantage theory, Factory proportion theory and Leontief paradox, Product life cycle theory, New trade theory, National competitive advantage:

Porter's diamond. International Business Environment: Economic, Demographic, Cultural and Political-legal environment.

Unit 3: Balance of Payment (BoP) [6hours]

Balance of Payment: Meaning, Components (Current, Capital and Official reserve), Reasons for disequilibrium in BoP, Measures to correct disequilibrium, Understanding India's BoP and comparing it with markets like USA and China.

Unit 4: Foreign Exchange and Global Capital Market [12hours]

Exchange Rate Determination: Currency Demand and Supply Curves, Factors Affecting Exchange Rate, Global Capital Market: Introduction, Benefits of global capital market, Growth of global capital market, Global capital market risk, Eurocurrency market, Global bond market, Global equity market, Exchange rate risk, Managing exchange rate risk, Methods of Financing International Trade.

Essential/recommended readings

1. Hill, C. (2021). International business: Competing in the global market place (13th Edition). *Strategic Direction*.

2. Krugman, P. R., & Obstfeld, M. (2009). International economics: Theory and policy. Pearson Education.

3. Levi, M.D. (2009). *International Finance* (5th Edition), Taylor and Francis Ltd.

4. Madura, J. (2020). *International financial management*. Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-11): ECONOMIC POLICY FRAMEWORK

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Economic Policy Framework (GE11)	4	3	1	0	Class 12	None

Learning Objectives

This course will help students

- to understand the importance, meaning and objective of macroeconomic policies
- to understand role and effect of fiscal policy and government expenditure
- to explore role of monetary policy and banking sector in India
- to analyse efficacy of fiscal/monetary policy under fixed and flexible exchange rate

Learning outcomes

By studying this course, students will be able to:

. · Learn the basic concept of macroeconomics

· Understand how different parameters of macroeconomics work under Indian economy.

· Understand how monetary and fiscal policy works.

· Know different exchange rate regimes.

SYLLABUS OF GE-11

UNIT – I: Meaning and objectives of economic policy (8 hours)

Tools and goals (objectives and instruments of policy) Circular flow of income (start with a two sector model and go up to a five sector model); National Income aggregates and the related concepts of national income; input-output table to calculate national income using the income, expenditure and the value added methods.

Unit 2: Fiscal policy (15 hours)

Objectives and meaning; effect of fiscal policy - role of tax policy (T) and government expenditure (G), Aggregate Demand, Meaning of the multiplier. Government expenditure multiplier and balanced budget multiplier Budget –meaning and purpose – example of India's latest Budget (and various heads). Meaning of fiscal, revenue and primary deficits.

Unit 3: Monetary policy (12 hours)

Meaning and objectives; money and credit – credit creation and instruments of credit control; Inflation targeting, Banking in India – structure, recent developments; issues of NPAs and how to resolve it.

Unit 4: Exchange rate policy **(10 hours)**

Structure of BOP; meaning of current account deficit and trade deficit; exchange rate definition (real and nominal); fixed vs flexible exchange rate, efficacy of fiscal/monetary policy under fixed and flexible exchange rate , effect of a change in exchange rate on the current account (imports and exports); structure of capital account and role of capital outflows and inflows.

Essential/recommended readings

1Gupta G.S (2016), Macroeconomics - Theory and Applications (4th edition). McGraw Hill,

2. Shapiro, Edward (1982), Macroeconomic Theory, 5th edition

3. Mankiw, Gregory N. (2010), Macroeconomics (7th edition), Worth Publishers.

4. Sikdar, Soumyen (2011), Principles of Macroeconomics, Oxford University Press

5. Krugman, P.R., Obstfeld, M. and Melitz, M. (2015). International Economics: Theory and Policy, Pearson Education Limited.

6. Dua, P. (2020). Monetary Policy Framework in India, Indian Economic Review, 55(1), June 2020, pp. 117-154.

9. http://www.inclusivejournal.in/about.html.

10. Sengupta, R. and Vardhan, H., Non-Performing Assets in Indian Banks, Economic and Political Weekly, 52(12) March 25, 2017, Money, Banking and Finance Special.

11. Economic Survey, India, latest issue

12. Union Budget Statement, India, Latest issue

Suggestive readings

1Abel, Andrew, Bernanke, Ben and Croushore, Dean (2011). Macroeconomics (7th edition). Pearson

2. Ghate, C., & Kletzer, K. M. (eds.) (2016). Monetary policy in India: A modern macroeconomic perspective. Springer.

3. Kaul, Vivek (2020) Bad Money: Inside the NPA Mess and how it threatens the Indian Banking System, Harper Collins Publisher India.

4. Chhibber, Ajay and Anees, Salman Soz (2021) India's Financial Sector: A Whodunnit. In Unshackling India. Haper Collins Publishers India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Annexure-1

Based on Undergraduate Curriculum Framework 2022

UNIVERSITY OF DELHI

UNDERGRADUATE PROGRAMMES OF STUDY

STRUCTURE, COURSES & SYLLABI OF SEMESTER VIII

SEMESTER -VI

B.A. (HONOURS) BUSINESS ECONOMICS

SEMESTER VI
B.A. (HONOURS) BUSINESS ECONOMICS

DISCIPLINE SPECIFIC CORE COURSE – 16 (DSC-16): OPERATIONS RESEARCH

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical		
Operations Research (DSC 16)	4	3	0	1	Class 12	None

Learning Objectives

The course intends to develop an understanding of:
(i) linear programming problems and their methods of solution
(ii) transportation and assignment problems, theory for solution and software methods
(iii) network analysis, Markov chains and applications
(iii) a decision making environment and theory of games

Learning outcomes

By studying this course, the students will be able to:

- Identify and develop operational research models from the verbal description of the real system.
- Understand the mathematical tools that are needed to solve optimization problems.
- Use mathematical software to solve the proposed models
- Develop critical thinking and use PERT and CPM techniques to improve decision making.

SYLLABUS OF DSC-16

UNIT–I: Introduction - Operations Research, Linear Programming, Integer Programming (15 hours)

(i) Introduction to Operations Research, characteristics, Phases, Methodology, Applications and scope
(ii) Formulation of Linear Programming problems, Graphical Solutions (Special cases: Multiple optimal solution, infeasibility, unbounded solution); Simplex Method, Special cases, Big-M method and Two-phase method; Duality (emphasis on formulation & economic interpretation); Sensitivity Analysis. (Excel Solver application)
(iii) Integer programming problem: Formulation, Solution through Gomory's Cut Method, managerial applications.

Unit 2: Transportation and Assignment Problem (9 hours)

(i) Transportation Problem: Formulation, Solution by N.W. Corner Rule, Least Cost method, Vogel's Approximation Method (VAM), Modified Distribution Method; Special cases: Multiple Solutions, Maximization case, unbalanced case, prohibited routes. (Excel Solver application)
(ii) Assignment Problem: Hungarian Method, Special cases: Multiple Solutions, Maximization case, Unbalanced case, Restrictions on assignment. (Excel solver application)

Unit 3: Network and Markov Analysis (12 hours)

(i) Network Analysis: Basic Concept, Construction of the Network diagram, Critical Path Analysis, float and slack analysis (Total float, free float, independent float), probability consideration in PERT (Interface with Project Management open-source software)
(ii) Markov Analysis: Assumptions of Markov analysis, construction of matrix of transition probabilities, brand switching analysis, vector of state probabilities, prediction of future market share, equilibrium conditions.

Unit 4: Decision Theory: (9 hours)

(i) Decision making environment, Construction of Pay off Table, Opportunity Loss Table, Decision under uncertainty, Decision under Risk: EMV, EOL, EVPI.
(ii) Decision under Conflict: Game Theory, Two-person Zero-Sum games, Maximin Minimax Principle, Games without Saddle point- Mixed strategy, Dominance Rule; Reduction of m x n game. (Application of Excel Solver)

Practical Component (30 Hours) : Practicals based on spreadsheet package (Microsoft Excel or equivalent) to enable students to apply all the concepts taken up in the theory classes in the course.

Essential/recommended readings

1. Vohra, N.D, Quantitative Techniques in Management, 5th ed., Tata McGraw Hill.
2. Gupta ManMohan, SwarupKanti, Introduction to Management Science Operations Research, 19th ed. Sultan Chand & Sons.
3. Sharma J.K., Operations Research: Theory and Applications, 6th ed. Trinity.
4. TahahamdyA.,Operations Research: An Introduction, 9th ed., Pearson.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 17 (DSC-17): Business Legislation in India

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite for the course
		Lecture	Tutorial	Practical	Class 12	None
Business Legislation in India (DSC 17)	4	3	1	0		

Learning Objectives

The course intends to inform and develop an understanding of:
1. The Indian Contract Act, 1872
2. The Sale of Goods Act, 1930
3. The Companies Act, 2013
4. The Intellectual Property Act, Competition Act and Consumer Protection Act

Learning outcomes

By studying this course, the students will able to:

- Understand the fundamentals of the various legislations for conducting business.
- Able to understand and appreciate the need for different legislations and the amendments thereof.
- Enable the student to initiate their own ventures in the form of entrepreneurs, and Company.
- Relate the legal framework with recent cases in the business world so as to have better understanding of their interpretations.

SYLLABUS OF DSC-17

UNIT – I: Indian Contract Act 1872 **(15 hours)**

Definition: Essential elements and Kinds of Contracts. Offer and Acceptance: legal rules, lapse and revocation. Consideration: Definition, Essentials and Exceptions. Capacity of Parties: Minor's agreements, Persons of unsound mind and Disqualified persons. Free Consent: Coercion, Undue Influence, Misrepresentation, fraud and Mistake. Discharge of a Contract and its various ways.Kinds of Remedies for Breach of a Contract.

Unit 2: The Sale of Goods Act 1930 **(8 hours)**

Contract of Sale of Good: Definition and Essentials: Sale and agreement to sell distinguished: Kinds of Goods and concept of price. Conditions and Warranties.Doctrine of caveat emptor and exceptions. Transfer of Property: Concept and Rules. Rights of Unpaid Seller against the goods and buyer.

Unit 3: The Companies Act 2013 **(15 hours)**

The Company: Definition and Characteristics. Kinds of Companies: On the basis of incorporation and liability of Members. Concept of One Person Company.Difference between Public and Private Company.Formation of a company–promotion, incorporation, on-line registration, commencement of business.Memorandum of Association.Articles of Association. Prospectus: Definition, Issue and Contents. Misleading prospectus and its consequences including remedies. Company Management: Definition of Directors, Legal Position of Directors, Number of Directors and Directorship, Qualification and Disqualification, Appointment and Removal, Powers and Duties of Directors.

Meetings and Resolutions: Types: AGM and EGM, Legal provisions, Requisites of a valid meeting, Voting, Proxy, Resolutions and its types, Minutes. Winding up of a Company – Meaning, Winding up and Dissolution distinguished, Modes and Consequences of Winding Up.

Unit 4: Laws of Intellectual Property, Competition and Consumer Protection (7 hours)

Intellectual Property Act: Patent Act, 1970: Meaning and Types. Patentable and Non- Patentable Inventions.Procedure for obtaining a patent. Trade Marks Act, 1999: Essentials and Definition. Conditions for Registration of Trade Marks. Design Act, 2000: Concept and Registration of Designs. Copyright in Registered Designs.General Provisions relating to design under the Act.
Competition Act 2002: Scope and applicability of the Act. Prohibition of Anti- Competitive agreement and abuse of dominant position. Regulation of Combinations. Duties, Powers and Functions of Competition Commission of India
Consumer Protection Act 2009: Scope and Applicability of the Act. Rights of consumer.Procedure for complaints.Duties and power of Central Consumer Protection Authority.

Essential/recommended readings

1Bansal V and Arora, A. Corporate Laws. Vikas Publishing, House (P) Ltd. New Delhi.

2. Chadha, R. Chadha, S. Corporate Laws. Mayur Paperbacks. New Delhi.

3. Kuchhal M.C &Vivek K. Business Legislation for Management. VIKAS Publishing House (P) Ltd.

4. Kumar, A. Corporate Laws. International Book House (P) Ltd.

5. Bare Acts relating to the laws.

Suggestive readings

1 Arora, S. Business Laws. New Delhi. Vikas Publishing House.

2. Gulsan, S.S. Business Laws. Excel Books.

3. Singh, Avtar. The Principles of Mercantile Law. Eastern Book Company. Lucknow.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – (DSC-18): ENVIRONMENTAL ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Environmental Economics (DSC 18)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course intends to develop an understanding of:
(i) the concept of sustainability and economy-environment interaction
(ii) public policies to control environmental damage and pollution
(iii) the use of risk and cost-benefit analysis for environmental conservation
(iv) global environmental concerns and their protocols

Learning outcomes

By studying this course, students will be able to:

- Provide the basic understanding interaction between environment and economic activities
- Understand sustainability
- Analyse different tools of environmental policies
- Understand global policies for environment

SYLLABUS OF DSC-18

UNIT – I: Environment and Sustainability (9 hours)

An Introduction to Environmental Economics; Economy–Environment interdependence, materials balance model of economy–environment interactions, the drivers of environmental Impact, Environmental Kuznets Curve Hypothesis. Concepts of sustainability: The Hartwick rule, Weak and strong sustainability, Resilience.

Unit 2: Environmental Policies (12 hours)

Conventional Policy: Environmental Standards, Efficiency of Environmental Standards, Command and Control Approach. Market Based Policy - Pollution Charges and Environmental Subsidies. Deposit Refund System. Pollution Permit Trading Systems.

Unit 3: Environmental Planning & Analytical Tools (12 hours)

Environmental Risk Analysis - Concept of Risk. Risk Assessment and Risk Management
Assessing Benefits for Environmental Decision Making - Environmental Benefits - Conceptual Issues. Approaches to Measuring Environmental Benefits - Physical Linkage Approach, Behavioral Linkage Approach -Direct and Indirect Estimation Methods, Benefit -Cost Analysis

Unit 4: Global Environmental Management and Regulations (12hours)

Ozone depletion, Climate change, International collaborations for environment, Montreal and Kyoto protocol, Paris agreement

Essential/recommended readings

1. Perman Roger, MaYue, McGilvray James and Common Michael. (2003) Natural Resource and Environmental Economics. Financial Times/ Prentice Hall.
2. Thomas Janet M., Callan Scott J.. (2012) Environmental Economics and Management: Theory, Policy, and Applications. South-Western College Publishing.
3. Kolstad Charles. (2012). Intermediate Environmental Economics.Oxford University Press
4. Hanley Nick, Shogren Jason F.and White Ben. (2006). Environmental Economics in Theory and Practice.Palgrave Macmillan

Suggestive readings

1. Henley, Nick and Roberts, Colin Ed. (2002). Issues in Environmental Economics. Wiley-Blackwell
2. Lenschow, Andrea and Lenschow Ed. (2001). Environmental Policy Integration.Routledge.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 2 (DSE-2): PUBLIC FINANCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Public Finance (DSE2)	4	3	1	0	Class 12	None

Learning Objectives

The course intends to develop and understanding of:
(i) scope and importance of public finance, its sources and expenditures
(ii) Evolution of the Indian tax system and current debates
(iii) Finance Commissions and their changing role
(iv) Canons of taxation and relevance to public revenues

Learning outcomes

By studying this course, the students will be able to:

- Apply tools of basic microeconomics to key policy issues relating to the spending, taxing and financing activities of the Government.
- Understand difference in impact of direct and indirect taxation.
- Understand the recent developments and issues in Indian Public Finance.

SYLLABUS OF DSE-2

Unit 1: Theory of Public Finance (12 hours)

Public finance: Meaning, nature, scope and importance, difference between private and public finance. Principle of maximum social advantage. Role of state in public finance.
Elementary theory of product and factor taxation
Sources of revenue: taxes, loans, grants and aid – meaning and types, Principle of public expenditure.
Public finance and the economic system.

Unit 2: Current Issues in India Tax System (12hours)

Direct and Indirect Tax Reform in India, Different forms of direct tax in India,
Changing regime of taxation-direct to indirect taxation,
Introduction of GST and its implication for state finances and fiscal federalism in India, Latest finance commission and its recommendation for fiscal devolution.

Unit 3: Center State Financial Relations (9hours)

Center state fiscal relations, horizontal and vertical tax devolution in India,
State and local finance in India
Performance and Equity debate in fiscal devolution in India
Report of finance commission in post liberalisation period

Unit 4: Principles of Taxation (12 hours)

Canons of taxation, Meaning of Canons of Taxation -Types of Canons of Taxation-Canon of equality or equity, Canon of certainty, Canon of economy, Canon of productivity, Canon of Diversity, Canon of convenience, Canon of elasticity, Canon of simplicity, Canon of diversity, Characteristics of Canons of Taxation.

Essential/recommended readings

1 Musgrave, R. A. and Musgrave, P.B., Public Finance in Theory and Practice (1989), 5th edition. McGraw Hill Education.

2. Bagchi, Amaresh. Reading in Public Finance, Oxford University Press.

3. Bhatia H.L.. Public Finance. Vikas Publishing House;

4. Shankar Acharya, Thirty years of Tax Reforms in India, EPW, May 2005

5. Rao, M. Govinda, "Central transfers to states in India: rewarding performance while ensuring equity." Final report submitted to NITI Aayog (2017) (pages 1 to 18).

6. Government of India, Fifteenth Finance Commission Report 2021-26, Chapter 6

Suggestive readings

1. Report of Finance commission of India, Various years.

2. Economic Survey, GoI, Various year

3. State Finances: - A Study of Budget, RBI, Latest report

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 4 (DSE-4): ADVERTISING MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Advertising Management (DSE 4)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course attempts to develop an understanding of :
(i) Advertising, its role, functions, agencies and budgets
(ii) Marketing and advertising plans in a firm's strategy
(iii) Execution of advertising plan and assessing its effectiveness
(iv) Different Media, their cost and options available for effective outcomes

Learning outcomes

By studying this course, the students will be able to:

- Understand the role played by advertising agencies.
- Recognise and identify the facet model objectives in any advertisement.
- Conduct situation analysis and consumer insight mining.
- Learn creative execution strategies including application of appeals, layouts and creative copywriting.
- Understand and conduct appropriate media mix selection.

SYLLABUS OF DSE-4

Unit 1: Foundations of Advertising **(10 hours)**

Concept of advertising, Types of advertising, Concept of IMC, Role and functions of Advertising, the key players, functions of advertising agencies, Organisation of agency, Advertising appropriateness-factors influencing advertising budgets, methods of setting advertising budgets.

Unit 2: Planning and Strategy **(13 hours)**

Planning Framework-marketing and advertising plan, Facet model of objectives (Perception, Cognition, Affect, Association, Action), DAGMAR, Marketing strategy and situation analysis, consumer insight mining, big idea, positioning for advertising campaigns.

Unit 3: Effective Advertising Execution **(12hours)**

The creative and message strategy, creative brief, themes and appeals, execution styles, message format, message tone, copywriting creativity, body copy, visual layouts, evaluation of effectiveness, pre-testing, post-testing.

Unit 4: Effective Advertising Media **(10 hours)**

Types of media, newer media options, media objectives, developing a media plan, media Plan budget, media mix selection.

Essential/recommended readings

1. Belch,G.E., Michael, A., Keyoor, Purani. Advertising and Promotion-An Integrated Maketing Communications. 12th edition. Tata McGraw Hill Education. 2021.
2. William Wells, Sandra Moriarty, and John Burnett. Advertising: Principles and Practice. Prenctice Hall of India. 2007.
3. Jethwaney, Jaishri., Jain, Shruti. Advertising Management. Oxford University press.
4. Shah, Kruti. Advertising and Integrated Marketing Communications. McGraw Hill Education India. 2014.
5. Aaker, David A., Batra, Rajeev., Myers, John G. Advertising Management. Pearson Education. 2006.
6. Shimp, T.A. .Advertising and Promotion: An IMC Approach. Cengage. 2013.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 6 (DSE-6): INTERNATIONAL FINANCIAL MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
International Financial Management (DSE 6)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course aims to give substantive knowledge about:
(i) key features of foreign exchange markets and development over the years
(ii) parity conditions in markets for foreign exchange
(iii) evolution of exchange rate systems from the gold standard to the present
(iv) its operations and hedging of risks in these markets.

Learning outcomes

By studying this course, the students will be able to:

- Gain substantive knowledge of International Financial Management.
- Understand the principles of trading in foreign exchange markets, different instruments traded, risks involved and how to carry out hedging of currency risks.
- Learn how to compute forward rates using cross rates, computation of synthetic quotes and apply rules to determine existence of arbitrage amongst currencies traded.
- Understand how the international markets have evolved and the alternate exchange rate systems world has seen over the years

SYLLABUS OF DSE-6

Unit 1: Introduction To Currency Markets (12 hours)

Spot & Forex market: Introduction and Features, Participants, & their method of communication in forex markets, SWIFT and CHIPS. Currency Quotes and types, Calculation of forward rates using spot rates, Discount/Premium on spot rate, Swap Points and Outright Forward Rates, Forward Rate vs. Expected Future spot rates, Spot rate with and without transaction costs, Payoff Profiles on Forward Exchange, Currency futures and Pay of Profiles, Mark to Market, Cross Rates & Synthetic quotes. Arbitrage: one point, two point and three point (triangular) arbitrage.

Unit 2: Parity Conditions in Currency Markets (12 hours)

Purchasing Power Parity (both absolute and relative versions), Interest Rate Parity (explanation of borrowing and lending criteria, diagrammatic presentation) , covered interest rate parity, International Fischer Effect. The linkages between parity conditions.

Unit 3: Alternate Exchange Rate Systems and Payment Terms (9 hours)

Gold Standard and Gold Exchange Standard System with price adjustment mechanism , EMS and its price adjustment, Hybrid systems , Fixed vs Flexible System, Overview on Brettonwoods System,

IMF, SDR, Triffon Paradox & Smithsonian Agreement. Payment Terms and Methods of Financing International Trade (Letter of Credit, Forfaiting, Factoring, Credit Lines)

Unit 4: Exchange Rate Determination and Exposures (12 hours)

Currency Demand and Supply Curves, Stability of exchange rates and 'J' Curve Effect, Factors Affecting Exchange Rate, Foreign Exchange Exposure: Nature, Definition, Exposure Line and Interpretating Exposure, Statistical Measurement of Exposure, Types of Exposure (Meaning): Transaction, Economic and Translation Exposure, Hedging Strategies to Manage Transaction Exposures. Currency Swaps.

Essential/recommended readings

1. Apte, P G., Multinational Financial Management.Tata-McGraw Hill. New Delhi.
2. Levi, Maurice. International Finance. McGraw Hill Inc. New York.
3. Madura, Jeff. International Financial Management.South Western Cengage Learning.
4. Seth, A.K., International Financial Management. Galgotia Publishing Company. New Delhi.
5. Shapiro, Allen C., Multinational Financial Management. Prentice Hall India Pvt Ltd. New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 8 (DSE-8): BEHAVIOURAL ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Behavioural Economics (DSE 8)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course attempts to impart an understanding of:
(i) the evolution and growing importance of behavioural economics
(ii) the question of choices when outcomes are known
(iii) formulation of choice under conditions of uncertainty
(iv) the theory of games and Nash equilibria under select circumstances

Learning outcomes

By studying this course, the students will be able to:

- To understand the departures from traditional theory by first explaining the decision-making process in a theoretical framework and then using empirical and experimental findings.
- To build a better understanding of consumer choices and behaviours to enhance his/her decision-making and he/she will be able to differentiate between economic and psychological approaches to human decisions. Understands how behavioural economies incorporates psychological factors such as altruism, fairness trust into standard theories to analyse human choices and also have the knowledge of predictive power of economic theories.
- To understand the main normative and descriptive approaches to know principles of decision making under risks
- To apply behavioural theory to interpretation of real decisions and public policy.

SYLLABUS OF DSE-8

Unit 1: Introduction **(9 hours)**

Introduction to behavioural economics: history, evolution, objective, scope, methods and concepts in behavioural economics.

Unit 2: Choice under certainty **(12 hours)**

Preferences, rationality, utility, menu dependence, decoy effect, endowment effect, heuristics and biases.

Unit 3: Choice under uncertainty **(12 hours)**

Probability, Bayes' Rule, Expected value, Confirmation Bias, Expected Utility, Bundling, Allais Problem.

Unit 4: Strategic Actions **(12 hours)**

Game Theory, Nash Equilibrium, Altruism, Fairness, Justice, Trust, Welfare Economics, Nudge Agenda and behavioural finance.

Essential/recommended readings

1. Angner, Erik (2016), A course in behavioral economics, (Second edition,), Palgrave, London
2. Colin F. Camerer, George Lowenstein & Matthew Rabin (Ed.) (2004), Advances in Behavioral Economics, Princeton University Press.
3. Wilkinson, Nick and Matthias, Klaes (2012), An introduction to Behavioral Economics, 2nd edition, Palgrave Macmillan.
4. Abdukadirov, Sherzod (ed.). Nudge Theory in Action: Behavioral Design in Policy and Markets

Suggestive readings

1. Andrikopoulos, Panagiotis. Modern Finance vs. Behavioural Finance: An Overview of Key Concepts and Major Arguments (June 2005). http://dx.doi.org/10.2139/ssrn.746204
2. Andreoni, James, Justin M. Rao, and Hannah Trachtman. "Avoiding the ask: A field experiment on altruism, empathy, and charitable giving." Journal of political Economy 125, no. 3 (2017): 625-653
3. Fama, Eugene F. "Market efficiency, long-term returns, and behavioral finance." Journal of financial economics 49, no. 3 (1998): 283-306.
4. Falk, Armin, and Christian Zehnder. "A city-wide experiment on trust discrimination." Journal of Public Economics 100 (2013): 15-27.
5. Kahneman, Daniel, Jack L. Knetsch, and Richard H. Thaler. "Experimental tests of the endowment effect and the Coase theorem." Journal of political Economy 98, no. 6 (1990): 1325-1348.
6. Samson, Alain. "An introduction to behavioral economics." The behavioral economics guide (2014): 1-12.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 10 (DSE-10): INDIAN ECONOMY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Indian Economy (DSE 10)	4	3	1	0	Class 12	None

Learning Objectives

The course is aimed at developing an understanding of:
(i) the different policy regimes in India since Independence: growth and development
(ii) Demographic trends, human development and state policies
(iii) Fiscal and monetary policies and laws related to labour
(iv) Sectoral growth and changes: agriculture, manufacturing and services

Learning outcomes

By studying this course, the students will be able to:

- Understand major issues and challenges facing the Indian Economy.
- Gain skills to analyze key economic issues and policy documents.
- Relate theoretical frameworks of macroeconomics and microeconomics to the Indian context.

SYLLABUS OF DSE-10

Unit 1: Economic Development since Independence (12 hours)

Major Features of the economy at independence; growth and development under different policy regimes—goals, constraints, institutions and policy framework; an assessment of performance—sustainability and regional contrasts; structural change, savings and investment.

Unit 2: Demographic Trends and policies (12hours)
Population and Human Development Demographic trends and issues; education; health and malnutrition. Policies in poverty; inequality and unemployment.

Unit 3: Macroeconomic Policies and Their Impact (9 hours)

Fiscal Policy; trade and investment policy; financial and monetary policies; labour laws.

Unit 4: Sectoral Growth & Development (12 hours)

Agriculture Growth; productivity; agrarian structure and technology; capital formation; trade; pricing and procurements. Industry: Growth; productivity; diversification; small scale industries; public sector; competition policy; foreign investment. Trends and issues in Service Sector.

Essential/recommended readings

1. Drèze, J., &Sen, A. (2013). An Uncertain Glory.Princeton University Press.

2. Balakrishnan, P. (2007). The Recovery of India: Economic Growth in the Nehru Era. Economic and Political Weekly, 42(45/46), 52–66.

3. Mohan, R. (2008). Growth Record of the Indian Economy, 1950-2008: A Story of Sustained Savings and Investment. Economic and Political Weekly, 43(19), 61–71.

4. Vaidyanathan, A., & Krishna, K. L. (2007). Institutions and markets in India's development. Oxford University Press.

5. T. Dyson, 2008, India 's Demographic Transition and its Consequences for Development in Uma Kapila, Indian Economy Since Independence, 19th edition, Academic Foundation.

6. Shankar Acharya, 2010, Macroeconomic Performance and Policies 2000-08, in Shankar Acharya and Rakesh Mohan, editors, India's Economy: Performances and Challenges: Development and Participation, Oxford University Press.

7. Rakesh Mohan, 2010, India 's Financial Sector and Monetary Policy Reforms, in Shankar Acharya and Rakesh Mohan, editors, India's Economy: Performances and Challenges: Development and Participation, Oxford University Press.

8. PulapreBalakrishnan, Ramesh Golait and Pankaj Kumar, 2008, Agricultural Growth in India Since 1991, RBI DEAP Study no. 27.

9. B.N. Goldar and S.C. Aggarwal, 2005, Trade Liberalisation and Price-Cost Margin in Indian Industries, The Developing Economics, September.

10. P. Goldberg, A. Khandelwal, N. Pavcnik and P. Topalova, 2009, Trade Liberalisation and New Imported Inputs, American Economic Review, Papers and Proceedings, May.

11. KunalSen, 2010, Trade, Foreign Direct Investment and Industrial Transformation in India, ïnPremachandraAthukorala, editor, The Rise of Asia, Routledge.

12. A. Ahsan, C. Pages and T. Roy, 2008, —Legislation, Enforcement and Adjudication in Indian Labour Markets: Origins, Consequences and the Way Forward, in D. Mazumdar and S. Sarkar, editors, Globalization, Labour Markets and Inequality in India, Routledge.

13. DipakMazumdar and SandeepSarkar, 2009, —The Employment Problem in India and the Phenomenon of the Missing Middle, Indian Journal of Labour Economics.

14. J. Dennis Rajakumar, 2011, Size and Growth of Private Corporate Sector in Indian Manufacturing, Economic and Political Weekly, April.

15. Ramesh Chand, 2010, Understanding the Nature and Causes of Food Inflation.Economic and Political Weekly, February.

16. BishwanathGoldar, 2011, Organised Manufacturing Employment: Continuing the Debate. Economic and Political Weekly, April.

17. Basu, K., &Maertens, A. (2012). The new Oxford companion to economics in India.New Delhi Oxford University Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 12 (DSE-12): RESEARCH METHODOLOGY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Research Methodology (DSE 12)	**4**	**3**	**0**	**1**	**Class 12**	**None**

Learning Objectives

The course provide an understanding of the methods of conducting research through:
(i) introducing students to basic concepts of quantitative and qualitative research methods.
(ii) scientific methods of collecting reliable data and appreciating primary and secondary data
(iii) parametric and non parametric tests and interpretation of the results
(iv) publishing of research and issues of ethics in data collection and use.

Learning outcomes

By studying this course, the students will be able to:

- Assess the roles of the researcher and the informant in the research process and be in a position to apply qualitative and quantitative research methodology.
- Perform literature reviews using print and online databases
- Learn about the various formats for citations of materials
- Describe sampling methods, measurement scales and instruments, and their appropriate uses
- Learn the rationale for research ethics
- Provide understanding of appropriate statistical techniques for summarizing and displaying business and economic data.
- Perform the basic qualitative and quantitative data analysis in a clear concise and understandable manner with an in-depth, faster and accurate univariate, bivariate and multivariate data analysis.

SYLLABUS OF DSE-12

Unit 1: Elements of Research (15 hours)

Research- Definition, characteristics, Objectives. Types of Research- Quantitative Vs Qualitative; Descriptive, Exploratory and Causal. Research Methodology- Research Process, Formulating the Research Problem, Research Questions. Hypothesis-Formulation of Hypothesis, Role of Hypothesis, tests of Hypothesis and Errors in hypothesis testing. Research Design - importance and types, features for a good research design. Concept of Population and Sample, Sampling Design- Probability and non-probability Sampling techniques, Sample Size and sampling Error.

Unit 2: Understanding Data and its Collection (15 hours)

Data types - Nominal, Ordinal, Interval and Scale
Primary and Secondary Data- advantages and disadvantages. Primary Data Collection: Observation method, Interview method, Questionnaires-prerequisites and designing, Case Study method Scales-Understanding, Construction and Application (Graphic Rating, Likert scale, paired comparison, ranking, constant sum, semantic differential scale). Secondary sources of data- previous empirical studies, NSSO, CSO, RBI, World Bank.

Unit 3: Processing and Analysis of Data (10 hours)

Data recording, conducting univariate and bi-variate analysis-using-descriptives, Cross-tabs-chi-square tests of independence, goodness of fit, One Sample t-test, Independent Sample t-test, Paired Sample t-test, (Assumptions Testing and Inferential Analysis ANOVA, Repeated measure ANOVA, MANOVA.
PCA, Cluster analysis, Factor Analysis, Discriminant analysis.

Unit 4: Additional Topics in Research (5 hours)

Review of Literature-techniques, do's and don'ts of conducting literature survey, citation, referencing styles, ethics in research.

Practical Component (30 hours) : Practicals to be based on use of a statistical software to enable to student to implement all the concepts and tools taken up in the theory classes in the course.

Essential/recommended readings

1. Donald R Cooper & Pamela S Schindler, "Business Research Methods", McGraw Hill
2. Business Research Methods – Alan Bryman& Emma Bell, Oxford University Press.
3. Ranjit Kumar, "Research Methodology: A Step-by- Step Guide for Beginners" Sage
4. Joseph F. Hair, Jr. William C. Black, Barry J. Babin, Rolph E. Anderson," Multivariate Data Analysis, Seventh Edition-Pearson's New International Edition

Suggestive readings

1. Amir D Aczel, "Complete Business Statistics", McGraw Hill Education.
2. Naresh K. Malhotra, "Marketing Research: An Applied Orientation" PHI
3. Field, Andy, "Discovering Statistics using IBM SPSS Statistics", 5th Edition, SAGE.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2): INTRODUCTION TO DIGITAL MARKETING

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE DEPARTMENTS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Digital Marketing (GE 2)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

This course aims to acquaint the students with:

- Key marketing principles and terminology.
- Evolving digital landscape and the strategic role of digital marketing processes and tools in designing the overall Marketing strategy.
- Methodologies, tools and technologies involved in digital marketing.
- Importance of search engines and their role in digital marketing ecosystem.

Learning outcomes

By studying this course, students will be able to:

- Understand the concept of digital marketing and its integration with traditional marketing.
- Understand customer value journey in digital context and behaviour of online consumers.
- learn email, content and social media marketing and apply the learnings to create digital media campaigns.
- Examine various tactics for enhancing a website's position and ranking with search engines and search advertising.

SYLLABUS OF GE-2

Unit 1: Fundamentals of Marketing **(6hours)**

Importance of marketing; Core marketing Concepts; Company Orientations; Concept of Segmentation, Targeting-Positioning; 7 P's Framework; Product Life cycle; Pricing strategies, Types of distribution channels; Promotion Mix.

Unit 2: Marketing in the Digital World **(9 hours)**

Digital marketing: Concept, Features, Difference between traditional and digital marketing, Moving from traditional to digital Marketing; Digital Marketing Channels: Intent Based- SEO, Search

Advertising; Brand Based- Display Advertising; Community Based-SMM; Others- Affiliate, Email, Content, Mobile; Customer Value Journey: 5As Framework; The Ozone O_3 Concept Key; Traits of online consumer.

Unit 3: Content, Email and Social Media Marketing (15 hours)

Content Marketing: Developing a content marketing strategy; Email Marketing: Types of Emails in email marketing, Email Marketing best practices; Social Media Marketing: Building Successful Social Media strategy; Social Media Marketing Channels; Facebook, LinkedIn, YouTube (Concepts and strategies)

Unit 4: Search Marketing (15 hours)

Introduction of SEM: Working of Search Engine; SERP Positioning; Search Engine Optimization: Overview of SEO Process; Goal Setting-Types

On-Page Optimization: Keyword Research, SEO Process -Site Structure, Content, Technical Mechanics, Headings, Image & Alt text, Social Sharing, Sitemaps, Technical Aspects-Compatibility, Structured Data Markup.

Off Page Optimization: Link Formats, Link Building, Content Marketing, Social Sharing; Black and White Hat Techniques

Search Advertising: Overview of PPC Process; Benefits of Paid Search; Basis of Ranking; Goal Setting-Objectives; Account Setting-Creation of Google Ads, Campaign architecture, Campaign setup, Targeting, Bid Strategy, Delivery, Ad Scheduling, Ad Rotation, Keyword Selection; Ad Copy composition, Ad Extension

Overview of Display Advertising: Working of Display Advertising; Benefits and challenges.

Essential/recommended readings

1. Dodson, I. (2016). The art of digital marketing: the definitive guide to creating strategic, targeted, and measurable online campaigns. John Wiley & Sons.
2. Kartajaya, H., Kotler, P., &Setiawan, I. (2016). Marketing 4.0: moving from traditional to digital. John Wiley & Sons.
3. Ryan, Damien. Understanding Digital Marketing - Marketing Strategies for Engaging the Digital Generation. Kogan Page Limited.

Additional References:

1. Kotler, P. (2009). Marketing management: A south asian perspective. Pearson Education, India.
2. Maity, Moutusy. Internet Marketing: A practical approach in the Indian Context. Oxford Publishing.
3. Gupta, Seema. Digital Marketing. McGraw Hill
4. Ultimate guide to digital Marketing. Digital Marketer

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4): STATISTICS FOR BUSINESS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Statistics for Business (GE4)	**4**	**3**	**0**	**1**	**Class 12**	**Mathematics at Class 12 level**

Learning Objectives

The objective of this course is to enable students to:

- Describe data using summary statistics.
- Develop detailed understanding of discrete and continuous distributions.
- Develop skills in statistical computing, statistical reasoning and inferential methods.
- Comprehend and analyse real data like real indices.

Learning outcomes

By studying this course, students will be able to:

· Learn tools and concepts of statistical analysis and interpretation.

· Comprehend fundamentals of probability theory.

· Develop skills in statistical computing, statistical reasoning and inferential methods.

· Comprehend and analyse real data like real indices.

SYLLABUS OF GE-4

Unit 1: Descriptive Statistics and Exploratory Data Analysis (15 hours)

Types of Variables (Quantitative, Qualitative, discrete, continuous), Scales of Data Measurement (nominal, ordinal, Interval & Ratio), Variable-; Primary & secondary Data.

Frequency distributions, Relative Frequency, Cumulative Distributions, Percentiles, Quartiles; Graphical representation of data- bar charts, pie, histograms, box plots.

Measures of central tendency: Mean, median, mode, Geometric Mean, Harmonic Mean, Weighted Mean & their properties. Selection of a measure of central tendency.

Measures of Dispersion: Range, inter-quartile range, quartile deviation, mean deviation, standard deviation, variance, coefficient of variance, properties of standard deviation, merits & demerits.

Skewness and Kurtosis: Meaning, measures- Karl Pearson, Bowley, Kelly's, Kurtosis- meaning, Moments, Kurtosis

Bivariate Analysis: Cross-tabulations and Scatter diagram; Correlation, Association and Simple Regression.

Unit 2: Probability (12 hours)

Axioms of probability; Review of counting rules, experiments, sample space, simple and complex events; Addition and multiplication rules; Concepts of Mutually exclusive events, independent events; Concepts of Joint, marginal and conditional probability; Permutation and Combinations

Concept of Discrete and continuous Random Variables; Expected value and variance; Examples of Theoretical Discrete and Continuous Probability Distributions – Binomial, Poisson and Normal distributions.

Unit 3: Sampling, Estimation and Hypotheses (15 hours)

Population versus Sample; Sample Statistics versus population parameters; Definition and Statistical properties of a Random Sample; Point and Interval Estimation and Small Sample Properties of Estimators (unbiasedness, efficiency); Central Limit Theorem. (Interval estimation for mean for large samples)

Basic concepts of Hypotheses Testing: Formulation of Null and Alternate Hypotheses; One-tailed and two-tailed Tests about population Mean; Concepts of Type I and Type II errors. (Hypothesis testing for mean and difference between mean for large samples only)

Unit 4: Index Numbers (6 hours)

Index Numbers: Use and construction of Laspeyres and Paasche index numbers; Fixed and chain base index numbers; Base shifting, splicing and deflating. Construction of real indexes: Consumer Price Index and BSE index.

Practical Component (30 hours) : Practicals to be based on a spreadsheet package (Microsoft Excel or equivalent) to enable the student to execute all the measures and tests taken up in the theory classes in the course.

Essential/recommended readings

1. Spiegel, M.R.(2003). Theory & Problems of Statistics, Schaum's outline series, McGraw Hill.
2. Levin, Richard I. and Rubin, David (1998). Statistics for Management (7th Edition), Pearson.
3. Gupta, S.C. (2018). Fundamentals of Statistics, Himalaya Publishing House
4. Spiegel, M. and Stephens, Larry (2017). Statistics (Schaum's Outline Series), Tata-Mcgraw-Hill, New Delhi

Suggestive readings

1 Nagar, A. L. and Das. R. K.. Basic Statistics (2nd Edition), Oxford University Press

2. Karmel, P. H. and Polasek, M. (1978). Applied Statistics for Economists (4th edition), Pitman.
3. Larsen, Richard J. and Marx, Morris L. (2011). An Introduction to Mathematical Statistics and its Applications. Prentice Hall.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6): INTRODUCTION TO FINANCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Finance (GE6)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

This course aims at providing a comprehensive introduction to:

- Financial system and its primary constituents.
- Sources of finance and time value of money.
- Basics of Investment and various asset classes.
- Key concepts of international financial management.

Learning outcomes

By studying this course, students will be able to:

Understand the meaning, scope and sources of Finance

· Estimate the present and future values of assets

· Examine the relationship between risk and return, and the nature and sources of risk in a stock market context

· Analyse the currency exchange market to deal exchange rate risk.

SYLLABUS OF GE-6

UNIT – I: A Primer on Financial Markets & Institutions (9 hours)

An overview of financial system: characteristics & requirements. Components & functions of financial system. Financial markets: characteristics & types. Types & role of Financial Institutions.An overview of the 2007–2008 Financial Crisis.

Unit 2: Corporate Finance: An Overview (12 hours)

Nature, scope and objectives of Finance, Emerging role of Finance Managers in India and Agency problem.Concept & Meaning of Financial Management, goals of financial management, the three financial decisions- Investing, Financing & Dividend.

Sources of Finance: Equity & Preference Capital, Retained earnings, Debt, Bonds, Long term loans, Short term advances from banks, public deposits & advances from customers and trade creditors.

Concept of Time Value of Money, Compound Value, Present Value, Annuity and Perpetuity.

Unit 3: Investment Management: Basics & Process (15 hours)

An overview of investment- Investment process, Types of assets- real & financial.Types of investors, types of financial securities & attributes of a good investment.

Concept of Risk & Return (Single asset), risk-return trade off, types of risk- systematic & unsystematic, types of return-holding period return, expected return, actual return.

Examining four broad asset classes: equity, bonds, mutual funds & derivatives.

Equity- three schools of thought on equity valuation- a brief discussion on fundamental analysis, technical analysis and efficient market hypothesis.

Bonds- types, fundamentals, relationship between interest rates & bond prices& yield curve.
Mutual Funds– meaning, importance, structure, mutual fund schemes, Systematic Investment Plan (SIP), Systematic Withdrawal Plan (SWP), Exchange Traded Fund (ETF), Equity Linked Savings Scheme (ELSS) and NAV of Fund.
Derivatives – Meaning and Types of Derivative Instruments (Forwards, Futures, Options and Swaps). Concept of diversification & portfolios.Portfolio Risk & Return(two security only).

Unit 4: A Beginners' Guide to International Finance (9hours)

International Monetary System- development of international finance and how the international monetary system evolved. Currency exchange markets and rates- currency exchange markets, exchange rate quotations, currency exchange rate appreciation and, depreciation, factors that affect currency exchange rates and arbitrage. Conducting business internationally. Concept of exchange rate risk.

Essential/recommended readings

1. Bodie, Zvi., Kane, Alex and Marcus, Alan J.. Investments. McGraw Hill.
2. Chandra, P.. Security Analysis and Portfolio Management. Tata McGraw Hill.
3. Pathak, Bharati. Indian Financial System. Pearson.
4. Ronald, W. Melicher and Norton, Edgar A.. Introduction to Finance: Financial Markets, Investment, and Financial Management. Wiley Publishing House. 2012.
5. Rustagi, R.P., Fundamentals of Financial Management. Taxmann.

Suggestive readings

1. Khan, M. Y & Jain P. K., Financial Management: Text and Problems. Tata McGraw Hill. New Delhi.
2. Kohn, Meir. Financial Institutions and Markets. Oxford University Press.
3. Kidwell, David S., Backwell, David W., Whidbee, David A. and Sias, Richard W. Financial Institutions, Markets and Money. Wiley Publications.
4. Madura, Jeff. Financial Markets and Institutions. South Western Cengage Learning.
5. Reilly, Frank K, and Brown, Keith C. Investment Analysis and Portfolio Management. Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-8): ENVIRONMENTAL ECONOMICS AND

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Environmental Economics and Climate Change (GE8)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

This course aims at inculcating an understanding of:

- How economic activities are affecting the environment.
- Social value of environmental resources.
- Climate change and its consequences.
- Efficient and effective policy measures for protecting the environment.

Learning outcomes

By studying this course, students will be able to:

. · Understand the linkage between environment and economics.

· Learn the basic theories of environmental economics.

· Understand the basic terminologies related to environment and Climate change.

· Analyse the effects of climate change on India and its future plan for environmental protection and mitigation.

SYLLABUS OF GE-8

UNIT – I: Introduction (8 hours)
Introduction to Environmental Economics, Material Balance model- economy environmental interactions, reasons for environmental degradation (population, technology, GDP), balance between environment and growth.

Unit 2: Economic Growth and Environmental Degradation (12 hours)
Theories of relationship between economic growth and environmental degradation: The environmental Kuznets curve hypothesis, The Brundtland Curve hypothesis, The environment Daly Curve hypothesis.

Unit 3: Climate Change and its Challenges (12 hours)
Introduction to the Climate Change, Drivers of Climate Change, Global impacts of Climate Change: Anthropogenic, Global warming, ozone hole, biodiversity loss, ecosystem services, natural capital and resources. Effect of Climate Change on India: Agriculture, Biodiversity, vulnerability of Coastal Belt, Rural Livelihoods and Food Security in India.

Unit 4: Actions Taken and Policy Framework (13 hours)
Global Level: Adaptation and Mitigation, Governmental and Intergovernmental Actions to Combat Climate Change: The Role of the Intergovernmental Panel on Climate Change (IPCC), United Nations Framework Convention on Climate Change, The Kyoto Protocol, Paris Agreement etc. The global

carbon market (CDM, JI, ET).India's Position on International Climate Negotiations, India's National Action Plan on Climate Change.

Essential/recommended readings

1. Callen,Thomas (2007). Environmental Economics, Thomson Learning Inc. Indian Edition.
2. Dubash, Navroz (2012). Handbook of Climate Change and India: Development, Politics and Governance, Earthscan
3. Bhattacharya, R. N. (ed.) (2001). Environmental Economics, An Indian Perspective, Oxford University Press.

Suggestive readings

1. Romm, J.J. 2018. Climate change: What Everyone Needs to Know. Oxford University Press
2. Dash. S.K. 2008. Climate Change, Cambridge University Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-10): INDIAN FINANCIAL SYSTEM

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Indian Financial System (GE10)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course attempts to develop an understanding of:
(i) the history and role of the Indian Financial System in economic development
(ii) the role and importance of financial markets; capital, equity and money markets
(iii) commercial banks, development banks, NBFCs - risk and NPAs; role of ARCs.
(iv) role of financial services in credit market

Learning outcomes

By studying this course, students will be able to:

. Analyse the financial market processes and their factors, and make successful financial decisions at an individual as well as company level.

· Evaluate various ways of raising funds from the financial markets domestically or internationally for the company.

· Study the considerations of banking and other financial institutions in real life.

· Evaluate various financial services offered under financial system of India.

SYLLABUS OF GE-10

UNIT – I: Financial System: An Introduction (6 hours)

Financial System: meaning, characteristics, significance and components; tracing the history of the Indian financial system and its contribution to Economic Development; markets, regulators and participants in the Indian financial system; financial instruments, direct and indirect finance, scams in Indian Financial System.

Unit 2: Financial Markets (18 hours)

Financial Markets – meaning, types, role, importance, and securities traded; linkages between financial markets and economy. Capital market – meaning, functions, organisation; Equity market – primary and secondary market, ways of raising funds, private equity, venture capital, introduction to debt market. Money market – meaning, functions, organisation, participants, instruments, trading mechanism, role of central bank.

Unit 3: Financial Institutions (9 hours)

Commercial Banking, Nationalisation of Commercial Banks, Structure of Commercial Banks in India, Depository and Non-Depository Institutions, Universal Banking, Payments Bank, Development Banks (IFCI, IDBI, NABARD and NHB), NBFCs, Risk Management in Banks, ARCs Problem of NPAs.

Unit 4: Financial Services (12 hours)

Credit Rating – Meaning, Process, Rating Methodology, Rating Symbols and Rating Agencies.
Insurance – Meaning, Importance, Types, Seven Principles and Regulation.
Leasing – Meaning, Features and Types of Leasing; Concept of Hire Purchase, Difference between Hire Purchase and Leasing; Factoring – Meaning, Functions, Types and Procedure; Forfaiting – Meaning, Process, Characteristics, Types, Advantages, Difference between Forfaiting and Factoring; Investment Banking – Meaning, Importance and Services Offered by Investment Bankers.

Essential/recommended readings

1 Khan, M.Y. Indian Financial System. Tata McGraw Hill.

2. Bhole, L.M. Financial Institutions and Markets. Tata McGraw Hill.

3. Varshney, P.N. and Mittal, D.K. Indian Financial System. Sultan Chand & Sons.

4. Pathak, Bharati. Indian Financial System. Pearson Publications.

5. Shahani, Rakesh. Financial Markets in India: A Research Initiative. Anamica Publishing Co.

Suggestive readings

1. Gordon, E. &Natarajan, K. Financial Markets and Services. Himalaya Publishing House.

2. Gupta, Shashi, Aggarwal, Nisha and Gupta, Neeti. Indian Financial System.Kalyani Publishers.

3. Kumar, Vinod., Gupta, Atul. andKaur, Manmeet. Financial Markets, Institutions and Services, Taxmann Publications.

4. Madura, Jeff. Financial Markets and Institutions. South Western Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-12): BASIC ECONOMETRICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Basic Econometrics (GE12)	**4**	**3**	**0**	**1**	**Class 12**	**Knowledge of Inferential and descriptive Statistics**

Learning Objectives

The course intends to explain to the student:
(i) the classical linear regression model, OLS, its assumptions, testing and functional forms
(ii) the k-variable linear regression model, testing coefficients and ANOVA, and Restricted Least Squares
(iii) treatment of regressions involving qualitative regressors
(iv) the implications, detection and remedies in case of violation of classical assumptions

Learning outcomes

By studying this course, students will be able to:

. · Explain Key econometric concepts.

· Formulate simple econometric models

· Interpret the regression results obtained from software packages.

· Identify the errors in regression models and rectify the same.

· Analyse the suitability of the data for solving the problem at hand

SYLLABUS OF GE-12

UNIT – I: The Classical Linear Regression Model (12 hours)
Types of Data: Time Series, Cross Section and Panel Data. Concept of Population Regression Function and Sample Regression Function, Assumptions of the model, Derivation of Coefficients of Regression in a two-variable model, Estimation of the SRF using OLS, Analysis of variance and R squared.
Expectation and standard errors of the regression coefficients and the error term. Gauss Markov Theorem. Interval estimation and tests on population regression coefficients, variance of population disturbance term and forecasts. Testing the significance of the model as a whole. Testing the normality assumption.
Extensions of the Two Variable Linear Regression Model: Regressions through the origin, Scaling of Variables and Regression on Standardized Variables. Functional forms of Linear Regression Models: The double log, semi-log, reciprocal, log- reciprocal models with applications.

Unit 2: Multiple Regression Model (15 hours)

Coefficients of regression in a multi variable model and their properties. Interval estimation, tests on population regression coefficients and model significance. Correlations, Goodness of fit and the Adjusted R square. Hypothesis testing for significance of the contribution of a variable, structural stability, restricted least squares.

Unit 3: Dummy Variable Regression Models (6 hours)

Intercept, Slope Dummy variables. Interaction between qualitative variables.Interaction between quantitative and qualitative variables.Use of dummy variables in testing for structural change and for seasonal indices.

Unit 4: Relaxing the Assumptions (12 hours)
Introduction to multicollinearity, heteroscedasticity, autocorrelation and specification errors.The nature of the problem, its detection and corrective measures.
Practical Component (30 hours) **:** Practicals to be based on an econometric software (e.g. Gretl/SPSS/Stata/Eviews/PSPP). The student is expected to implement using the software all the regressions and tests noted in the syllabus.

Essential/recommended readings

1 Gujarati, D. and Sangeetha, N. (2007) Basic Econometrics. Fourth Edition, Tata McGraw-Hill, New Delhi

2. Dougherty, Christopher. (2011). "Introduction to Econometrics," Oxford University Press,

3. Wooldridge, J. M. (2006). Introductory econometrics: A modern approach. Mason, OH: Thomson/South-Western.

4. Manual of the relevant software

Suggestive readings

1. Asteriou, D., & Hall, S.G. (2011). Applied econometrics. Palgrave Macmillan.

2. Brooks, Chris (2008). Introductory Econometrics for Finance (2nd edition). Cambridge University Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Annexure-1

Based on Undergraduate Curriculum Framework 2022

UNIVERSITY OF DELHI

UNDERGRADUATE PROGRAMMES OF STUDY

STRUCTURE, COURSES & SYLLABI OF SEMESTER VIII

SEMESTER -VII

B.A. (HONOURS) BUSINESS ECONOMICS

दिल्ली विश्वविद्यालय
University of Delhi

परिषद शाखा - I, कमरा नं: 212, नया प्रशासनिक खंड, दिल्ली विश्वविद्यालय, दिल्ली-110007, दूरभाष: 011-27001156/54
Council Branch - II, Room No. 211, New Administrative Block, University of Delhi, Delhi – 110007, Ph: 27001156/54

CNC-II/093/1/EC-1273/25/

Dated: 13.05.2025
20

NOTIFICATION

Sub: Amendment to Ordinance V

(ECR 38-27 dated 17.01.2025)

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

The following Syllabi under Faculty of Applied Social Science and Humanities based on Undergraduate Curriculum Framework 2022, are notified herewith for the information of all concerned:

(1) B.A.(Hons.) Business Economics - Semester 7 **(Annexure-1)**
(2) BMS - Semesters 7 and 8 **(Annexure-2)**
(3) BBA(FIA) - Semesters 7 and 8 **(Annexure-3)**
(4) BMMMC - Semesters 7 and 8 **(Annexure-4)**
(5) B.Voc Web Designing - Semesters 7 and 8 **(Annexure-5)**

20/5/25

REGISTRAR

B.A. (Hons) BUSINESS ECONOMICS

Courses Offered Bythe Department Of Finance And Business Economics,
Faculty Of Applied Social Sciences And Humanities

Category I

Business Economics Course for Undergraduate Programme of study with Business Economics as a Single Core Discipline

(B.A. Honours in Business Economics)

DISCIPLINE SPECIFIC CORE COURSES

Code	Semester	Course Name	Credits	Instruction	Page
DSC – 19	VII	Data Science	4	2L + 2P	

DISCIPLINE SPECIFIC ELECTIVE COURSES

Code	Semester	Course Name	Credits	Instruction	Page
DSE - 1	Odd	Income Tax Law and Practice (already passed)	4	3L+1T	
DSE - 3	Odd	Entrepreneurship (already passed)	4	3L+1T	
DSE - 5	Odd	Investment and Portfolio Optimization (already passed)	4	3L+1T	
DSE - 7	Odd	Monetary Economics (already passed)	4	3L+1T	
DSE - 9	Odd	International Economics (already passed)	4	3L+1T	
DSE - 11	Odd	Understanding Consumers (already passed)	4	3L+1T	
DSE - 12	Odd	Research Methodology (already passed)	4	3L + 1P	
DSE - 13	Odd	Behavioural Finance	4	3L+1T	
DSE – 15	Odd	Development Economics	4	3L+1T	
DSE – 17	Odd	Brand Management	4	3L+1T	
DSE – 19	Odd	Business Valuation	4	3L+1T	
DSE - 21	Odd	Applied Econometrics	4	3L+1P	

GENERIC ELECTIVE COURSES

Code	Semester	Course Name	Credits	Instruction	Page

GE-1	Odd	Principles of Microeconomics (already passed)	4	3L+1T	
GE-3	Odd	Legal Environment of Business (already passed)	4	3L+1T	
GE-5	Odd	Quantitative Techniques in Management (already passed)	4	3L+1T	
GE-7	Odd	Economics of Startups (already passed)	4	3L+1T	
GE-9	Odd	International Economics (already passed)	4	3L+1T	
GE-11	Odd	Economic Policy Framework (already passed)	4	3L+1T	

DISCIPLINE SPECIFIC CORE COURSE – 10 (DSC-19): DATA SCIENCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Data Science (DSC 19)	4	2	0	2	Class 12	Maths at Class XII level

Learning Objectives

The course aims to:

- Understand the purpose of Data Science is **to find patterns within data**.
- Use various statistical and mathematical techniques to analyse and draw insights from data.
- Explore Special tools and techniques to analyse the data. Realise that data in real life is usually noisy and messy, therefore special tools and techniques are needed to draw meaningful insights from it.

Learning outcomes

By studying this course, the students will be able to:

- Understand the methods and techniques commonly used in data science.
- Retrieve, organize and explore data
- Demonstrate the ability to clean and prepare data for analysis
- Use the techniques of data analysis, inferential statistics, machine learning, and statistical computing in an integrated capacity.

SYLLABUS OF DSC-19

UNIT–I: Introduction to Data Science [5hours]

Definition of Data, Big Data and Data Science. The current landscape of perspectives - Skill sets needed, Work profile of Data Scientists, Data ethics, valuing different aspects of privacy (eg.GDPR); Data science process overview (Defining Goals – Data acquisition-retrieval-preparation-exploratory analysis-modelling-visualisation); Big Data – problems in handling large data, distributed data storage and processing, Supervised and Unsupervised learning Models, Supervised Learning Models: Classification and regression, bias – variance trade-off.

Basics of Python for Machine Learning.

Unit 2:Data Processing [10hours]

Data pre-processing: (Data Wrangling) Data cleaning - data integration - Data Reduction, Data Transformation and Data Discretization. (Univariate analysis, Handling Missing values, and outliers, imputation of missing values, encoding of nominal and ordinal variables, scaling/standardization of variables).

Exploratory Data Analysis - Basic tools (plots, graphs and summary statistics)

Feature Selection methods – Filter methods (correlation, ANOVA, chi-square, variance threshold, Phi-k correlation), Wrapper methods, Decision Trees; Random Forests.

Unit 3:Clustering and introduction to Data Visualisation [5hours]

Clustering: Choosing distance metrics - Different clustering approaches - hierarchical clustering, K-means, DBSCAN, Relative merits of each method. Data Visualization: Basic principles, ideas and tools for data visualization. (Bars, box plots, heat maps, histograms, normal plots)

Unit 4:Machine Learning [10hours]

Familiarisation with machine learning process (training-testing-validation), Basic Machine,Data Imbalance, Data diversity, Machine Learning Pipeline
Learning Supervised learning algorithms: Linear Regression- Regression diagnostics, checking assumptions of Linear Regression, root mean square error, R2 and adjusted R2
Logistic Regression – Understanding concept and application, Data Imbalance, Evaluation metrics-Classification matrix, Sensitivity, Specificity, ROC curves. Decision trees.

Practical Component (30 practical sessions; total 60 Hours): Practical to be based on Python Programming Language. The student is expected to conduct an end-to-end modelling journey which has Exploratory Data Analysis (EDA), feature engineering, Model development, turning and interpretation of the results. An econometrics-based project to be taken up to constitute the end-term practical examination.

Essential/recommended readings

1. O'Neil Cathy and Schutt Rachel (2014). Doing Data Science, Straight Talk from The Frontline, O'Reilly.
2. McKinney,Wes. (2012). Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython, O'Reilly Media.
3. Gareth James, Daniela Witten, Trevor Hastie, Robert Tibshirani, Jonathan Taylor (2023). An Introduction to Statistical Learning: With Applications in Python,Springer Cham.

Suggested readings

1. Harrison,Matt, (2016), Learning the Pandas Library: Python Tools for Data Munging, Analysis, and Visualization, O'Reilly.
2. Grus Joel (2015), Data Science from Scratch: First Principles with Python, O'Reilly Media.

DISCIPLINE SPECIFIC ELECTIVE COURSE 1 (DSE-1): INCOME TAX LAW AND PRACTICE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Income Tax Law and Practice (DSE1)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at

- Introducing basic definitions in Income Tax Act, 1961.
- Computing taxable income under the heads Salaries and House Property
- Calculate Profits and Gains of Business or Profession, Capital Gains and Income from other sources
- Understand deductions from gross taxable income and filling of returns.

Learning outcomes

By studying this course, the students will be able to:

- Understand the Process of determination of taxable income
- Explore the fire pillars of Income Tax
- Apply the deductions to taxable income as per the latest provisions of Income-tax Act, 1961
- Acquire the skill of Filling Basic Returns of Income Tax

SYLLABUS OF DSE-1

Unit 1: Introductory Concepts **(3 hours)**

Permanent Account Number (PAN), Assessment Year, Previous Year, Person, Assessee, Gross Total Income, Total income and its computation, Tax Rates, Residential status; Relationship between Residential Status and Incidence of Tax. Incomes Exempted under section 10.

Unit 2: Computation for "Salaries" and "Income from House Property" **(15 hours)**

Income under the head "Salaries": Meaning of Salary, basis of charge, Allowances, Perquisites, permissible deductions from salary income, Deduction under Section 80 C.

Income under the head "Income from House Property": Basis of charge, income from let out house property, income from self-occupied property.

Unit 3: Computation for 'Profits and Gains of Business or Profession', 'Capital Gains' and 'Income from other sources' (15 hours)

Profits and gains of business or profession: Basis of charge, important rules regarding assessment of PGBP, computation of Profits from Business or Profession, deductions expressly allowed, expenses expressly disallowed.

Capital gains: basis of charge, meaning of capital asset, cost of acquisition, improvement and indexation, exemptions for capital gains arising from transfer of Capital Assets, calculation of tax on short-term and long-term capital gains.

Income from other sources: basis of charge, dividend, winnings from lotteries, crossword puzzles, etc., interest on securities, advance money received for transfer of a capital asset, permissible deductions.

Unit 4: Computation of Total Income and Tax Liability (12 hours)

Computation of total income; Deductions from gross total income under section 80 C to 80 U; Rebates and reliefs; Set-off and carry forward of losses (Concept only), Concept of advance payment of Tax and Deduction of Tax at Source. Computation of Taxable Income and liability of Tax. e-Filing of Returns: ITR-1 (SAHAJ) and ITR-2

Essential/recommended readings

1. Ahuja, G. and Gupta, R. Simplified Approach to Income Tax. Flair Publications (P) Ltd.
2. Singhania, V.K. and Singhania, M. Students Guide to Income Tax. Taxmann Publications (P) Ltd.

Software which will be used for teaching are

1. 'Excel Utility' available at incometaxindiaefiling.gov.in
2. Vinod Kumar Singhania, e-filing of Income Tax Returns and Computation of Tax Taxmann Publication (P) Ltd, New Delhi. (Latest version)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 3 (DSE-3): ENTREPRENEURSHIP

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Entrepreneurship (DSE 3)	4	3	1	0	Class 12	None

Learning Objectives

The aims of this course are:

- To introduce the concept of entrepreneurship and its role in the economy
- To launch an Entrepreneurial Venture and writing a business plan
- To identify and explore legal and financial requirements of a business
- To understand the role and creativity in sustainable Business

Learning outcomes

By studying this course, the students will be able to:

· Develop critical thinking, problem solving skills and entrepreneurial mind-set in students.

· Enhance the understanding of the entrepreneurial process from idea generation, to concept development and creation of the venture.

· Enable the understanding of the business models, legal aspects of enterprise and writing a business plan.

· Apprise students with ways to finance and scale up the business.

SYLLABUS OF DSE-3

Unit 1: Introduction to Entrepreneurship **(9 hours)**

Concept of Entrepreneurship; Attributes of Entrepreneur; Distinction between entrepreneur and manager; Concept of corporate entrepreneurship/ intrapreneurship; Concept of social entrepreneurship; Role of entrepreneurship for an economy; Understanding business model strategy; Legal forms of enterprise; case study discussion on entrepreneurs, intrapreneurs, business models

Unit 2: Launching Entrepreneurial Venture **(12 hours)**

Identification of opportunities and Idea generation and screening methods- Brainstorming, mind-mapping, story-telling, SCAMPER, attribute listing, focus group interviews, customer

feedback; Feasibility studies- Marketing, Financial, Technical, Socio-economic Feasibility; Writing Business Plan

Unit 3: Legal and Financial Aspects **(12 hours)**

Legal requirements of business (Basic concept and relevance of patents, copyrights, and trademark); Financing- Start-up phase financing, growth stage financing, Maturity-phase financing; angel investment and venture capital, other forms of external financing; case study discussion on financing a venture

Unit 4: Sustaining and Scaling Up **(12 hours)**

Keeping the entrepreneurial spirit alive- Challenges and remedies, Role of creativity and innovation, Barriers to entrepreneurship, Concept of sustainability, Ethical Perspectives; Introducing Shared Innovation into the Business Model; Evolution of CSR from Compliance to Sustainable Entrepreneurship; How to Design CSR Strategies that Optimize Impact for Business and Society

Essential/recommended readings

1. Harvard Business Review Entrepreneur's Handbook: Everything You Need to Launch and Grow Your New Business
2. Hisrich, R. D. International entrepreneurship: starting, developing, and managing a global venture. Sage Publications.
3. Sharma, S., Starik, M., &Wuebker, R. Sustainability, innovation and entrepreneurship: introduction to the volume.

Additional References:

1. Blank, S., Andreessen, M., Hoffman, R., &Sahlman, W. A. (2018). HBR's 10 Must Reads on Entrepreneurship and Startups (featuring Bonus Article "Why the Lean Startup Changes Everything" by Steve Blank). Harvard Business Press.
2. Drucker, P. (2014). Innovation and entrepreneurship. Routledge.
3. Hisrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A.: Entrepreneurship, Tata McGraw Hill.
4. Kuratko, D.F., and Rao, T. V., Entrepreneurship: A South-Asian Perspective, Cengage.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 5 (DSE-5): INVESTMENT AND PORTFOLIO OPTIMIZATION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Investment and Portfolio Optimization (DSE 5)	4	3	1	0	Class 12	None

Learning Objectives

This course aims to:

- Provide a broad overview of investment and risk associated with it
- Measurement and analysis of return and risk of an equity on the basis of fundamental and technical analysis
- Understand bond fundamentals and interest rate theories
- Construction, analysis and evaluation of a portfolio of securities.

Learning outcomes

By studying this course, the students will be able to:

- Understand the theoretical and practical background of investments valuation
- Compute the value of equity and debt instruments
- Analyse and manage the bond as well as equity portfolios in the real world.
- Evaluate the performance of the portfolio the portfolio performances

SYLLABUS OF DSE5

Unit 1: Basics of Investment **(6 hours)**

Investment alternatives and objectives, investment, gambling, speculation, introduction to risk – return trade off: types of risks, sources of risks, measures, analysis, determinants of required rates of return and relationship between risk and return. Types of returns: Holding Period Return (HPR) & Compound Annual Growth Rate (CAGR). Attributes of a good investment. Types of assets: Real Assets versus Financial Assets. Investment Process.

Unit 2: Analysis of Equity **(12hours)**

Measurement of return and risk of equity shares. Approaches to equity analysis, Fundamental Analysis- Economy, Industry, Company Analysis (EIC framework); Equity Valuation Models (DDM, P/E Ratio model and Free Cash Flow Valuation approach). Valuation based on other ratios-P/B ratio, Price to Sales ratio and Price to Cash flow ratio. Technical Analysis – Concept, market indicators and specific stock indicators.

Random Walk Theory & Efficient Market Hypothesis (EMH): Forms, empirical evidence and tests.

Unit 3: Analysis of Bonds (12hours)

Bond fundamentals, types of bonds & risks in bonds. Valuation of bonds. Bond yields-current yield and Yield-to-maturity (YTM). Bond price-yield relationship, analysis of risks in bonds-duration and modified duration. Theories of term structure-Expectations theory, Segmented markets theory and Liquidity Preference theory. Yield curve.

Unit 4: Portfolio Construction, Management and Evaluation (15hours)

Modern Portfolio theory: Diversification & portfolio risk, Harry Markowitz model, measurement of portfolio risk and return, measurement of co-movements in security returns, calculation of portfolio risk, efficient frontier and optimal risky portfolio. Riskless lending & borrowing and capital market line.
Capital Asset Pricing Model: Development of the CAPM, assumptions, beta and security market line. Sharpe's Single Index Model. Portfolio performance evaluation- Sharpe's index, Treynor's Index, Jensen's alpha, and Information ratio.
Note: Some case studies related to above topics are required to be discussed.

Essential/recommended readings

1. Bodie, Zvi., Kane Alex and Alan J. Marcus. Investments. McGraw Hill.
2. Chandra, P. Security Analysis and Portfolio Management. Tata McGraw Hill.
3. Francis. J.C. & Taylor, R.W. Theory and Problems of Investments. Schaum's Outline Series. TMH. New Delhi,
4. Fischer, Donald E. and Ronald J. Jordan. Security Analysis and Portfolio Management. PHI Learning.
5. Pandian, Punithavathy. Security Analysis and Portfolio Management. 2nd Edition. Vikas Publishing House. New Delhi
6. Reilly, Frank K, and Brown, Keith C. Investment Analysis and Portfolio Management. Cengage Learning.
7. Rustagi, R.P. Investment Management. Sultan Chand & Sons.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 7 (DSE-7): Monetary Economics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Monetary Economics (DSE 7)	4	3	1	0	Class 12	None

Learning Objectives

The aim of the Course are:

This course provides the student the knowledge of:

- Understand forms of money and its measures and associated theories
- Explore money and capital markets, Financial products, institutions and crises
- Evaluate Interest rates, their determination and associated theories
- Discuss the Structure and role of the banking system and its reforms
- Describe Monetary theory, monetary policy, its goals and current practice in India

Learning outcomes

By studying this course, the students will be able to:

· Develop a critical understanding of functioning of financial institutions, markets and instruments and how growth of the real economy is interspersed with financial innovation and crisis.

· Understand the role of Banks and Capital markets.

· Develop an understanding of theory of monetary policy and how it is conducted in India by Reserve Bank of India.

· Demonstrate basic understanding of few current issues including demonetization, cryptocurrency and problems faced by the banking sector in their appropriate contexts.

SYLLABUS OF DSE7

Unit 1: **(8 hours)**

Concept, functions and measurement, and Theories of Money Supply Determination, Demonetization and Cryptocurrency.

Unit 2: **(15 hours)**

Financial Institutions, Markets. Instruments and Financial innovation.

Role of Financial Markets and Institutions; problems of asymmetric information, adverse selection and moral hazard, financial crisis. Money and Capital Markets, Organization, Structure and Reforms in India: Role of Financial Derivatives and other Innovations.

Unit 3: **(8 hours)**

Interest rates Determination, Sources of interest rate differentials, Theories of Term Structure of Interest rates, Interest rates in India.

Unit 4: **(8 hours)**

Banking System, Balance Sheet and Portfolio Management, Indian Banking System, Changing role and Structure, Banking Sector Reforms.

Unit 5: **(6 hours)**

Central Banking and Monetary Policy, Functions, Balance Sheet, Goals, Targets (operating, intermediate and final), Indicators and instruments of monetary control, Tinbergen's theorem, Inflation targeting, monetary management, current monetary policy in India**.**

Essential/recommended readings

1. Fabozzi F Jet al(2009): Foundations of Financial Markets and Institutions, Pearson
2. MishkinFS , Eakins S G,Jayakumar T , Pattnaik R K (2017): Financial Markets and Institutions, Pearson.
3. Dua, P(2020), "Monetary Policy Framework in India", Indian Economic Review, Vol. 55, Issue 1, June 2020
4. Jadhav,Narender: Monetary Policy,Financial stability and Central Banking in India Macmillan,NewDelhi,India
5. Kaul,Vivek(2020) Bad money: inside the NPA Mess and how does it threaten the Indian Banking System, Harper Collin Publisher India
6. Ghate, C., &Kletzer, K. M. (Eds.). (2016). Monetary policy in India: A modern macroeconomic perspective. Springer
7. Chibber, Ajay, Salman, Soz, Anees(2021) India's Financial Sector: A Whodunnit
8. EDs in Unshackling India. Haper Collins Publishers India.
9. Report of the Working Group: Money Supply Analytics and Methodology of Compilation, 1998 Annual Report; Master Circular - Prudential Norms on Capital Adequacy - Basel I Framework – 2011; RBI Bulletin; Report of Currency and Finance (latest).
10. Various publications of RBI and other agencies / institutions
11. Raghuram_Rajan_Committee_on_Financial_Sector_Reforms

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 9 (DSE-9): International Economics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
International Economics (DSE 9)	4	3	1	0	Class 12	None

Learning Objectives

The course aims to:

- Explain the historical view of International trade and production and consumption gains from trade
- Analyse the working of H-O theory and new trade theory
- Understand the international trade policies and its impact on trade
- Understand the functioning of WTO and its implications for India.

Learning outcomes

By studying this course, the students will be able to:

- Compare basic theories of International Trade and the terms used therein.
- Analyse trade policies and instruments used to control International Trade.
- Discuss the role of WTO and its impact on international Trade.
- Describe various concepts related to Regionalism and Integration and their importance.

SYLLABUS OF DSE-9

Unit 1: International Trade Theories **(12 hours)**

International trade as an Engine of Growth, Ancient view of International Trade, Theory of Mercantilism, Absolute Advantage theory, Comparative Advantage Theory, Opportunity cost theory of trade, Autarky Equilibrium, Production and Consumption Gains from Trade.

Unit 2: Modern Theories of Trade **(12 hours)**

Introduction, H-O theory- Assumptions, General Equilibrium framework, the working of H-O theory, Factor price equilibrium theorem, Income Distribution effects of H-O theory, Empirical implications of H-O theory, Leontief Paradox, Factor Intensity Reversal, New trade theories (Difference in technology, Economies of Scale and Monopolistic Competition and Trade)

Unit 3: International Trade Policies and Practices **(12 hours)**

Trade Policy Instruments, Tariffs Barriers, Import Tariff- It's effect and measurement, Non-Tariff Barriers- Import Quotas, Voluntary Export Restraints, Anti-Dumping, Economic Integrations, Regional groups – EU, NAFTA and SAARC/ ASEAN, Theory of Customs Union - Impact of customs union on trade- trade creation and diversion. Import Substitution and Export Promotion.

Unit 4: WTO and Trade **(9 hours)**

What is WTO, Objectives, Principles, Areas of Function of WTO, Role of WTO in trade, Foreign Trade Policy of India, The Sanitary and Phyto SanitaryAgreement (SPS) of WTO and Its Implications for India, India & World Trade Organization (WTO): WTO Agreement on Agriculture.

Essential/recommended readings

1. Salvatore, D. (Edition 2008) , International Economics, Pearson Education : New Delhi
2. Krugman Paul R. & Obstfeld M. (2013) : International Economics:- Theory and Policy (IXth Edition), Pearson Education , New Delhi.
3. Cherunilam Francis :International Economics (Vth Edition), McGraw Hill Education (India) Pvt Ltd.- Latest edition
4. WTO and its implications on Indian Agriculture, National Institute of Agricultural Extension Management (MANAGE), Hyderabad.

Additional References:

1. Appleyard Dennis R.; Cobb Steven; Field Alfred J. (2010). International Economics (Vth Edition), McGraw Hill Education (India) Pvt Ltd.
2. Thompson, Henry(2010): International Economics – Global markets and competition 2nd Edition Singapore; Hachensack, N.J: World Scientific.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 11 (DSE-11): UNDERSTANDING CONSUMERS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Understanding Consumers (DSE 11)	4	3	1	0	Class 12	None

Learning Objectives

The course aims to:

- Understand psyche of a consumer and his personality traits
- Apply theories to learn and predict consumer behaviour
- Learn culture role and dynamics of Family and Consumer socialization
- Analyse consumer decision making process and diffusion of innovation

Learning outcomes

By studying this course, the students will be able to:

- Understand personality theories and their applications to consumer psychology.
- Analyse consumer perception in advertising through psychology based theories of perception.
- Examine behavioural learning theories and consumer attitude formation in the context of advertisements.
- Inpect the role of opinion leaders, family and culture in consumer decisions.
- Identify the use of consumer behaviour concepts in prevalent advertisements.

SYLLABUS OF DSE-11

Unit 1: Personality, Perception and Positioning (12 hours)

Freudian Theory, Neo-Freudian theory of personality; Personality traits; Anthropomorphism; Self-Perception; Sensory information, Absolute and differential thresholds; Perceptual Selection, Perceptual Organisation, Interpretation of cues and imagery, Risk perception; Positioning and Repositioning (including use of perceptual mapping).

Unit 2. Consumer Learning and Attitude (12hours)

Elements, Behavioural learning theories (Classical, Instrumental, Observational); Information processing; Cognitive learning theory, Consumer involvement and hemispheric lateralisation; Recognition and recall measures. Consumer attitude formation; Tri-

component attitude model; Attitudes motivational functions; Elaboration Likelihood Model; Cognitive dissonance and conflict resolution; Causality and attribution theory.

Unit 3. Persuasion, Social Setting and Culture (9hours)

Broadcasted versus Addressable messages, message structure, persuasive appeals; Credibility and persuasive power of reference groups, Opinion leaders (influencers), Word-of-mouth strategic applications
Family and consumer Socialization; family decision making and members' roles;
Culture's role and dynamics; Learning Cultural Values; Measuring values; Core values.

Unit 4. Consumer Decision-Making and Diffusion of Innovations (12 hours)

Consumer decision making: need recognition, decision spectrum, pre-purchase search, evaluation, decision rules, rules and marketing strategy, incomplete information, post-purchase evaluation- brand loyalty, disconfirmation of expectations; Consumer gifting behaviour; Diffusion, Types of innovation, Features affecting adoption, Adoption process.

Essential/recommended readings

1. Schiffman, Leon G., Kanuk, Leslie Lazar.,Kumar, S. Ramesh. Consumer Behaviour. 12th ed. Pearson Publications.

Additional References:

1. Hawkins, Roger J., Best, Kenneth A., Coney. Consumer Behaviour: Building Marketing Startegy. Tata McgrawHill.
2. Solomon, Michael. Consumer Behaviour: Buying, Having and Being. 12th ed. Pearson Publications.
3. Nair, Suja. Consumer Behaviour in Indian Perspective. Himalaya Publications.
4. Kumar, S Ramesh. Conceptual Issues in Consumer Behaviour. Pearson Publication.
5. Sheth, Jagdish N., Mittal, Banwari. Customer Behaviour: A Managerial Perspective. Thomson Publication.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 12 (DSE-12): RESEARCH METHODOLOGY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Research Methodology (DSE 12)	**4**	**3**	**0**	**1**	**Class 12**	**None**

Learning Objectives

The Course aims to:

The course aims to provide an understanding of:

- Discuss concepts of quantitative and qualitative research methods.
- Compare methods of collecting reliable data and appreciating primary and secondary data
- Analyze parametric and non-parametric tests and interpretation of the results
- Understand issues of research ethics in data collection and use

Learning outcomes

By studying this course, the students will be able to:

- Assess the roles of the researcher and the informant in the research process and be in a position to apply qualitative and quantitative research methodology.
- Perform literature reviews using print and online databases
- Explore the various formats for citations of materials
- Describe sampling methods, measurement scales and instruments, and their appropriate uses
- Recognise rationale for research ethics
- Provide understanding of appropriate statistical techniques for summarizing and displaying business and economic data.
- Perform the basic qualitative and quantitative data analysis in a clear concise and understandable manner with an in-depth, faster and accurate univariate, bivariate and multivariate data analysis.

SYLLABUS OF DSE-12

Unit 1: Elements of Research **(15 hours)**

Research- Definition, characteristics, Objectives. Types of Research- Quantitative Vs Qualitative; Descriptive, Exploratory and Causal. Research Methodology- Research Process, Formulating the

Research Problem, Research Questions. Hypothesis-Formulation of Hypothesis, Role of Hypothesis, tests of Hypothesis and Errors in hypothesis testing. Research Design - importance and types, features for a good research design. Concept of Population and Sample, Sampling Design- Probability and non-probability Sampling techniques, Sample Size and sampling Error.

Unit 2: Understanding Data and its Collection **(15 hours)**

Data types - Nominal, Ordinal, Interval and Scale
Primary and Secondary Data- advantages and disadvantages. Primary Data Collection: Observation method, Interview method, Questionnaires-prerequisites and designing, Case Study method Scales-Understanding, Construction and Application (Graphic Rating, Likert scale, paired comparison, ranking, constant sum, semantic differential scale). Secondary sources of data- previous empirical studies, NSSO, CSO, RBI, World Bank.

Unit 3: Processing and Analysis of Data **(10 hours)**

Data recording, conducting univariate and bi-variate analysis-using-descriptives, Cross-tabs-chi-square tests of independence, goodness of fit, One Sample t-test, Independent Sample t-test, Paired Sample t-test, (Assumptions Testing and Inferential Analysis ANOVA, Repeated measure ANOVA, MANOVA.
PCA, Cluster analysis, Factor Analysis, Discriminant analysis.

Unit 4: Additional Topics in Research **(5 hours)**

Review of Literature-techniques, do's and don'ts of conducting literature survey, citation, referencing styles, ethics in research.

Practical Component (15 practical sessions; total 30 Hours): Practical to be based on use of a statistical software to enable to student to implement all the concepts and tools taken up in the theory classes in the course.

Essential/recommended readings

1. Donald R Cooper & Pamela S Schindler, "Business Research Methods", McGraw Hill
2. Business Research Methods – Alan Bryman& Emma Bell, Oxford University Press.
3. Ranjit Kumar, "Research Methodology: A Step-by- Step Guide for Beginners" Sage
4. Joseph F. Hair, Jr. William C. Black, Barry J. Babin, Rolph E. Anderson," Multivariate Data Analysis, Seventh Edition-Pearson's New International Edition

Suggestive readings

1. Amir D Aczel, "Complete Business Statistics", McGraw Hill Education.
2. Naresh K. Malhotra, "Marketing Research: An Applied Orientation" PHI
3. Field, Andy, "Discovering Statistics using IBM SPSS Statistics", 5th Edition, SAGE.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 13 (DSE-13): BEHAVIOURAL FINANCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Behavioural Finance (DSE 13)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at:

- Introducing the core principles of behavioural finance, psychological biases and emotions influencing financial decision-making.
- Identifying common biases (e.g., overconfidence, loss aversion) and their impact on investor behaviour and market outcomes.
- Examining how psychological factors contribute to market anomalies and inefficiencies that traditional finance models can't explain.
- Developing skills to apply behavioural finance concepts in real-world scenarios, including portfolio management, financial advising, and investor behaviour analysis.

Learning outcomes

By studying this course, the students will be able to:

- Recognize and explain key psychological biases and how they influence financial decision-making.
- Develop the ability to analyze and interpret market inefficiencies and anomalies using behavioural finance concepts.
- Apply behavioural finance theories to practical financial decisions, such as investment strategies, portfolio management, and retirement planning.
- Assess how emotions and psychological factors impact individual and institutional investor behaviour, and the broader implications for market dynamics.

SYLLABUS OF DSE-13

Unit 1: Introduction to the Practical Applications of Behavioural Finance **(9 hours)**

Meaning of behavioural finance, traditional finance vs. Behavioural finance, evolution of behavioural finance, key themes in behavioural finance, a brief history of behavioural finance and behavioural finance micro vs. Behavioural finance macro.

Success & failure in investing and understanding behavioural trends in markets.

Unit 2. Heuristics, Biases and Decision making (15 hours)

How the human mind works: the two systems, heuristics or rules of thumb, rationale for heuristics, categories of heuristics & their biases, familiarity and related heuristics, representativeness and related heuristics, anchoring and irrationality and adaptation.

Behavioural obstacles to investing.

Self-deception: Forms of overconfidence, causes of overconfidence, factors impeding overconfidence, other forms of self-deception, how much do the experts know, the success equation: untangling skill and luck in business.

Investor Behaviour: Portrait of an individual investor, What the heuristics and biases mean for financial decision-making, Implications of overconfidence for decision-making, Influence of emotions, Implications of mental accounting, Behavioural portfolio theory, Knowing yourself: Psychographic models, Basic ingredients of a sound investment philosophy, Strategies for overcoming psychological biases. Case studies

Unit 3: Market Anomalies, Puzzles and Value Investing (12 hours)

Market Outcomes: Size effect and seasonality, Momentum and long-term reversal, post-earnings announcement drift, the value premium, Equity premium puzzle, Excessive volatility, Bubbles and crashes and Behavioural asset pricing model.

Investment styles: Value and Growth investing. Behavioural obstacles to value investing.

Value Central tenets of value investing, Evidence and prospects of value investing, Strategies of some well-known value investors and Academic research on value investing.

Contrarian investing - The psychology of going against the crowd: Meaning, psychological constraints and conventional versus contrarian portfolio

Unit 4: Market Bubbles, Financial Crisis & Lessons (9 hours)

Growth trap: Introduction, behavioural anomalies behind investors chasing, fads and fancies, starting of the Indian equity cult, long-term stock returns, examples of growth trap, differentiating between good investment and good business, evidence and lessons for investors.

Bubble trap: Anatomy of financial crisis, how is a bubble formed?, human behavioral anomalies, how does one identify a bubble?, lessons for investors, why do past bubbles not guide us and conclusion.An account of the global financial crisis.

References

Essential

1. Baker, H. K., &Nofsinger, J. R. (2010). Behavioural Finance: Investors, Corporations, and Markets. Hoboken, New Jersey, United States of America: JohnWiley&Sons.(Chapter 1 and 4)

2. Chandra, P. (2016). Behavioural Finance. Delhi, India: McGraw Hill Education (India).(Chapter: 3,4,,9 and Appendix A)

3. Parikh, P. (2009). Value Investing and Behavioural Finance: Insights into Indian Stock Market Realities. Delhi, India: Tata McGraw-Hill.(Chapter 1,2,3,4 and 11)

4. Pompian, M. M. (2006). Behavioural Finance and Wealth Management: How to Build Optimal Portfolios That Account for Investor Biases. Hoboken, New Jersey, United States of America: John Wiley & Sons. (Chapter 1,2 and 24)

Additional

1. Bazerman, M. H., & Moore, D. A. (2002). Judgment in managerial decision making. New Jersey: John Wiley & Sons. (Malkiel, 2003)

2. Malkiel, B. M. (2003). The Efficient Market Hypothesis and Its Critics. Journal of Economic Perspectives , 17 (1), 59-82.

3. Shefrin, H. (2002). Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing. New York: Oxford University Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 15 (DSE-15): DEVELOPMENT ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Development Economics (DSE 15)	4	3	1	0	Class 12	Knowledge of basics of Economics theory

Learning Objectives

The course aims to help understand the economic, social and institutional factors influencing growth and development. In this light it focusses on:

- Evaluation of development theories
- Addressing issues of poverty and inequality
- Exploring the role of institutions of the state and the market

Learning outcomes

By studying this course, the students will be able to:

- Explore different aspects of growth and development
- Predict and Analyse growth models
- Demonstrate the Interrelationship of poverty, inequality and development are related
- Evaluate role of government and market in economic development

SYLLABUS OF DSE-15

Unit 1: Introduction **(9 hours)**

Meaning of Economic Development, Comparison of Economic Growth and Development, Measurement of Economic Development- Traditional Approach, PCI and Indices based approach, HDI & its components, Core value of development, Sen's Capabilities Approach and Ultimate objective of economic development, quality of life and happiness index

Unit 2:Development Models **(12 hours)**

Balanced vs. Unbalanced growth approach, Economic Development of Labour Surplus Economy, Rural-Urban migration model, Export led growth & open economy growth model

Unit 3: Inequality andPoverty **(12 hours)**

The concept of inequality- various measures of inequality, commonly used inequality measures, gender inequality and economic development, poverty, HPI, poverty traps and vicious circle of

poverty, population growth and economic development, demographic transition theory, cost of education, child labour and externalities, low level of equilibrium trap and critical minimum effort theory

Unit 4: State and Markets **(12 hours)**

The role of state in neo-liberal regime, strategic retreat of state, Structural adjustment Approach of Bretton woods institution, Success and failure of Economic reform and financial crisis in developing countries- experience of 1990s and later financial crisis in Asian and European countries

References:

Essential

1. Ray Debraj, (Latest Edition) Development Economics, Oxford University Press.
2. Jones Charles, (2013) Introduction to Economic Growth, W. W. Nortan& Company.
3. Meier, (2005) Leading Issues in Economic Development, Oxford University Press.
4. Michael. P. Todaro, (2014) Economic Developments, Pearson.
5. Hayami F, (2005) Development Economics, Oxford University Press.
6. Thirwall A.P. (2003) Growth and Development, Palgrave Macmillan.

Additional

1. Acemoglu Daron(2009) Introduction to Modern Economic Growth, Princeton University Press.
2. Cypher James, (2014) The Process of Economic Development 4th Edition, Routledge.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 17 (DSE-17): BRAND MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Brand Management (DSE 17)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at:

- Understanding the strategic importance of brands for businesses and consumers.
- Developing, positioning, and differentiating brands in competitive markets.
- Building strong brand communications, foster brand loyalty, and engage with customers through various channels.
- Learning brand management tools, techniques, and strategies to manage and grow brands in a dynamic market environment.

Learning outcomes

By studying this course, the students will be able to:

- Comprehend the importance of brands in building sustainable competitive advantage amidst global brands.
- Apply branding concepts resulting into major branding decisions.
- Instil the ability to build strong brands in the digital era.
- Manage branding activities in global markets.

SYLLABUS OF DSE-17

Unit 1: Brand Management **(12 hours)**

Brand: Concept, Importance, History, Brand Creation across different product categories, Challenges and Opportunities. Strategic Brand Management Process, Brand Equity- Concept, Customer Based Brand Equity, Sources of Brand Equity, Measurement (Qualitative & Quantitative research Techniques). Brand Knowledge, Brand Positioning- Concept, frame of reference, Guidelines. Brand Mantra.

Unit 2: Brand Building and Development **(12 hours)**

Brand Identity- Concept and elements, Criteria for choosing Brand Elements. Brand Makeovers, Aaker Brand Personality Framework, Legal Branding Considerations in India. Brand Building & Development -Brand Resonance Model, Brand Value Chain. Brand Architecture Strategy (Concept), Brand Extensions.

Unit 3: Branding in the Digital Era **(9 hours)**

Key Issues for Branding in Digital Era, Brand Engagement, Digital Communications, Social Media Channels, Mobile Marketing, Influencer Marketing, Content Marketing. Big Data & Marketing Analytics Dashboards- Concept, Importance for marketers.

Unit 4: Managing Global Brands **(12 hours)**

Market Performance - Comparative Methods to assess Brand Equity, Holistic Methods for valuing Brand Equity, Brand Valuation.

Managing Global Brands - Global Branding, Strategies for Creating & Managing Global Brands, Marketing Mix for Global Brands, Marketing to Consumers in Developed versus Developing markets.

References:

Essential

1. Keller, K.L., & Swaminathan, V., et al (2020). Strategic Brand Management: Building, Measuring, and Managing Brand Equity (5th Edition). Pearson.

Additional

Latest edition of the readings should be used.

1. Aaker D.A., &Joachimsthaler E. Brand Leadership: The Next Level of the Brand Revolution. The Free Press.
2. Aaker, J. L. Dimensions of brand personality. Journal of marketing research, 34(3), 347-356.
3. Chiaravalle, B., & Schenck, B.F. Branding for Dummies. Wiley India Edition.
4. Kapferer, J.N. The New Strategic Brand Management: Advanced Insights and Strategic Thinking (5th Edition). London: Kogan Page.
5. Keller, K.L. Conceptualizing, Measuring, and Managing Customer-Based Brand Equity. Journal Of Marketing 57, no 1 (1993);1-29.
6. Keller,K.L.; Sternthal,B. and Tybout, A.M. Three Questions You Need to Ask About Your Brand. Harvard Business Review 80, no 9 (2002);80-89.
7. Moorthi, Y. L. Brand Management: The Indian Context. Vikas Publishing House Pvt Limited.
8. Patel, V. N., & Sharma, S. Brand Management & Consumer Marketing. Oxford Book Company.
9. Upshaw, L. B. Building Brand Identity: A Strategy for Success in a Hostile Marketplace. Wiley Publications.
10. Verma H.V. Brand Management : Text and Cases. Excel Books.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 19 (DSE-19): BUSINESS VALUATION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Business Valuation (DSE 19)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at:

- Providing an understanding of the key methods and frameworks used in business valuation, including both quantitative and qualitative approaches.
- Equippingstudents with the skills to analyze and interpret financial statements, enabling accurate assessment of a business's financial health and value.
- Developing the ability to assess external market conditions, industry trends, and risk factors that affect the value of a business.
- Applying various valuation techniques (such as discounted cash flow, comparable company analysis, and precedent transactions) in different business contexts like mergers, acquisitions, and investments.

Learning outcomes

By studying this course, the students will be able to:

- Apply key business valuation techniques (DCF, market comps, precedent transactions, asset-based methods) to estimate the value of a company in various scenarios.
- Interpret and critically analyze financial statements (income statement, balance sheet, cash flow) to assess the financial health and value drivers of a business.
- Assess and evaluate macroeconomic, industry, and company-specific factors, and incorporate risk elements into the valuation process.
- Make well-reasoned, defensible business valuation decisions based on solid financial data, market research, and strategic considerations.

SYLLABUS OF DSE-19

Unit 1: Introduction to Business Valuation **(6 hours)**

Genesis of Valuation; Need for valuation; Hindrances/Bottlenecks in valuation; Business Valuation Approaches; Principles of Valuation (Cost, price and Value); Purpose of Valuation: M & A, Sale of Business, Fund Raising, Voluntary Assessment; Taxation; Finance; Accounting; Industry perspective; Statutory Dimension; Society Angle.

Unit 2: Business Valuation Methods **(15 hours)**

Discounted Cash flow Valuation: Estimating discount rates- the cost of capital, Cash flow and valuation, valuation of companies: forecasting cash flows. Beyond valuation of companies: Growth, future value drivers, optimum capital structure.

Relative Valuation Method: Meaning, Reasons for popularity and potential pitfalls, Values and multiples- Earnings multiples, book value multiples, revenue multiples, and sector-specific multiples. Equity and Value multiples. Basic steps to using multiples. Reconciling relative and discounted cash flow valuation.

Unit 3: Valuations of Tangibles and Intangibles (12 hours)

Overview of valuation of Immovable Properties; Plant and Machinery; Equipments; vehicles; Capital Work in progress; Industrial Plots; land and Buildings; Vessels, ships, Barges etc. Definition of Intangible Assets; Categorization of Intangibles- Marketing Related (Trademarks, Trade names, Certification marks, internet domains), Customer or Supplier Related (Advertising Agreements, Licensing, Royalty Agreements, Servicing contracts, Franchise agreements), Technology related (Contractual or non-contractual rights to use: Patented or unpatented technologies, Data Bases, Formulae, Designs, Softwares, Process), Artistic Related (Royalties from artistic works: Plays, Books, Films, Music). Valuation of Human Resources.

Unit 4: Valuation in Mergers and Acquisitions (12 hours)

Meaning of business mergers, types; Sources of Synergy: revenue, operating expense, cost of capital, tax payments; effect of merger on the earnings per share; estimating synergy and its problems.

References:

1. Chandra, Prasanna. Corporate Valuation: A guide for Analysis, Managers and Investors. McGraw Hill Education Private Limited.
2. Damodaran, A. Damodaran on Valuation, Security Analysis for investment and Corporate Finance (2nd ed.). Wiley India Pvt. Ltd.
3. K. G., CA, &Sehrawat, N. K. Handbook on Valuation- Concept & Cases. New Delhi, Bharat Law House Pvt. Ltd.
4. Mohanty. Pitabas. Business Valuation (Text & Cases). Taxmann Publications Pvt Ltd.

Additional References:

1. Damodaran. Investment Valuation: Tools and Techniques for determining the value of any asset. 3rd Edition. Wiley India Pvt. Ltd.
2. Damodaran. Corporate Finance: Theory and Practical. 2nd Edition. Wiley India Pvt. Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 21 (DSE-21): APPLIED ECONOMETRICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Applied Econometrics (DSE 21)	4	3	0	1	Class 12	Knowledge of Basic Econometrics

Learning Objectives

The course aims at:

- Illustrate key econometric methods (e.g., OLS, IV, GMM) and apply them to real-world data.
- Develop data analysis skills, including data cleaning, model estimation, and diagnostic testing.
- Conduct causal inference and understand the implications of model assumptions and violations.
- Interpret and communicate econometric results effectively for both technical and non-technical audiences.

Learning outcomes

By studying this course, the students will be able to:

- Formulate and interpret regression results obtained from software packages.
- Identify the errors in regression models and rectify the same.
- Analyse the suitability of different models for solving the problem at hand
- Understand the theoretical basis for techniques widely used in empirical research and consider their application in a wide range of problems.

SYLLABUS OF DSE-21

Unit 1: Empirical Model **(3 hours)**

Stages in empirical econometric research

Unit 2: Linear Regression Model **(9 hours)**

The linear regression model in matrix form. Estimation, specification and diagnostic testing.

Unit 3: Instrumental Variable Estimation **(12 hours)**

Omitted variable in a simple regression model. IV estimation and two stage least squares.

Unit 4: Panel Data Regression **(12 hours)**

Independent pooled cross section regression, fixed and random effects models.

Unit 5: Limited Dependent Model **(9 hours)**

Logit and Probit models for binary responses.

Practical: (15 practical sessions; total 30 Hours)

To learn the use of an econometric package STATA/Python/R or any other appropriate one.
To extract data from recognized databases and to execute models from each of the units listed in this each course.

References

1. Gujarati, D. (2014). Econometrics by example, 2nded.Palgrave Macmillan.
2. Gujarati, D., Porter, D. (2012). Basic econometrics, 5th ed.McGraw-Hill
3. Wooldridge, J. (2014). Introduction to econometrics: A modern approach, 5th ed.Cengage Learning.

Additional References:

1. Asteriou, D., & Hall, S. G. (2011). Applied econometrics. Palgrave Macmillan.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE DEPARTMENTS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

GENERIC ELECTIVES (GE-1): PRINCIPLES OF MICROECONOMICS

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Principles of Microeconomics (GE 1)	4	3	1	0	Class 12	None

Learning Objectives

This course aims

- To offer basic understanding of the basic principles of micro economics like problem of scarcity and choice, demand and supply, elasticity.
- To introduce students with basic consumer theory,
- To acquaint students with production and cost concept
- To expose the student to the basic principles and concepts in Macroeconomic variables -- GDP, consumption, savings, investment, money and credit etc.
- To learn measurement of national income and related aggregates; nominal and real income
- To determine actual and potential GDP
- To understand the functioning of money market

Learning outcomes

By studying this course, students will be able to:

- Explain the principles of economics of the modern economy.
- Interpret the consumer theory, production, and costs etc.
- Analyse the basic principles of macroeconomics, national income accounting and determination of GDP.
- Examine the functioning of the money market.

SYLLABUS OF GE-1

Unit 1: Introduction **(6 hours)**

Problem of scarcity and choice: scarcity, choice and opportunity cost; production possibility frontier; economic systems.

Demand and supply: law of demand, determinants of demand, shifts of demand versus movements along a demand curve, market demand, law of supply, determinants of supply,

shifts of supply versus movements along a supply curve, market supply, market equilibrium.

Applications of demand and supply: price rationing, price floors, consumer surplus, producer surplus.

Elasticity: price elasticity of demand, calculating elasticity, determinants of price elasticity, other elasticities.

Unit 2: Consumer Theory (9 hours)

Budget constraint, concept of utility, diminishing marginal utility, Diamond-water paradox, income and substitution effects; consumer choice: indifference curves, derivation of demand curve from indifference curve and budget constraint.

Unit 3: Production and Costs (9 hours)

Production: behaviour of profit maximising firms, production process, production functions, law of variable proportions, choice of technology, isoquant and isocost lines, cost minimizing equilibrium condition.

Costs: costs in the short run, costs in the long run, revenue and profit maximizations, minimizing losses, short run industry supply curve, economies and diseconomies of scale, long run adjustments.

Unit 4: Introduction to Macroeconomics (6 hours)

What is macroeconomics, Macroeconomic issues in an economy.

Unit 5: National Income Accounting (6 hours)

Concepts of GDP Aggregates and National Income; measurement of national income and related aggregates; nominal and real income; GDP and welfare and the limitations of the GDP concept.

Unit 6: Determination of GDP (6 hours)

Actual and potential GDP; aggregate expenditure; consumption function; investment function; equilibrium GDP; concepts of MPS, APS, MPC, APC; autonomous expenditure; Concept of multiplier.

Unit 7: **Money and Credit (3 hours)**

Money in a Modern Economy: Concept of money in a modern economy; monetary aggregates; demand for money; quantity theory of money; liquidity preference and rate of interest; money supply and credit creation; monetary policy

Essential/recommended readings

1. Case, K.E., Fair, R. C., and Oster, S. E. (2017). Principles of Economics (12th Ed.). Pearson.
2. Dornbusch, R., Fischer, S. and Startz. R. Macroeconomics (11th Edition). McGraw-Hill.
3. Mankiw, N.G. (2021). Principles of Economics, (9th Edition). Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3): LEGAL ENVIRONMENT OF BUSINESS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Legal Environment of Business (GE 3)	4	3	1	0	Class 12	None

Learning Objectives

The course intends:

- To familiarize the student with the concept and essentials of Indian Contract act which govern business for its efficient conduct and to apply them in real life situations.
- To explain the meaning, nature and incorporation of a company.
- To make students understand and apply the provisions of Sale of Goods Act and Consumer Protection Act.
- To recognize and articulate legal principles related to Limited Liability Partnership and Information Technology Act.

Learning outcomes

By studying this course, students will be able to:

- Examine the basic rules and provisions of Contract and Agreements.
- Recognize provisions to formation and functioning of company and LLP.
- Interpret the significance and role of law of sale of goods act
- Apply the law correctly to different facts and in different contexts

SYLLABUS OF GE-3

Unit 1: Indian Contract Act **(12 hours)**

Meaning and Essentials of a Contract; Valid, Void and Voidable Contract; Offer and Acceptance; Consideration; Capacity of Parties; Free Consent; Discharge of Contract and Remedies for Breach of a Contract.

Unit 2: Companies Act **(12 hours)**

Meaning and Nature of Company; Promotion and Incorporation of a Company; Memorandum of Association; Articles of Association; Misleading Prospectus and remedies available to the parties; Board of Directors and their qualification, duties, powers. Company Meetings and Resolutions.

Unit 3: Sale of Goods Act and Consumer Protection Act (12 hours)

Essentials of a Contract of Sale; Sale and Agreement to Sell, Conditions and Warranties; Transfer of Title by Non-Owners; Doctrine of Caveat Emptor; Rights of Unpaid Seller.Consumer Protection Act 2009: Scope and Applicability of the Act. Rights of consumer. Procedure for complaints. Duties and power of Central Consumer Protection Authority.

Unit 4: Limited Liability Partnership Act and IT Act (9 hours)

Meaning and nature of LLP; LLP and Company; LLP Agreement, Partners and Designated Partners, Incorporation of LLP; Partners and their Relations, Extent and limitation of liability of LLP.

Information Technology Act 2000:Concept and role; Digital signature, Electronic governance, Attribution, Acknowledgement and dispatch of electronic records, Regulation of certifying authorities, Digital signatures certificates, Duties of subscribers, Penalties and adjudication, Appellate Tribunal, Offences.

Essential/recommended readings

1. Bansal, V & Arora, A. Corporate Laws. Vikas Publishing, House (P) Ltd. New Delhi.
2. Kuchhal M.C & Vivek K. Business Legislation for Management. VIKAS Publishing House (P) Ltd.
3. Kumar, A. Corporate Laws. International Book House (P) Ltd.
4. Bare Acts relating to the laws.

Suggestive readings

1. Chadha, R,. Chadha, S. Corporate Laws. Mayur Paperbacks. New Delhi.
2. Maheshwari & Maheshwari. Business Law. National Publishing House. New Delhi.
3. Singh, Avtar. The Principles of Mercantile Law. Eastern Book Company. Lucknow.
4. Tulsian, P.C. Business Law. Tata McGraw Hill. New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5): QUANTITATIVE TECHNIQUES IN

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Total Hours of Teaching	Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice			
Quantitative Techniques in Management (GE 5)	4	3	1	0	45	Class 12	None

Learning Objectives

To apprise students:

- To understand the concepts, formulation and interpretation of linear programming methods and its application in diverse problems.
- To formulate and solve Transportation and Assignment problems
- To understand basic concept, construction of the Network diagram and Critical Path Analysis
- To introduce game theory and network analysis forms part of the course.

Learning outcomes

By studying this course, students will be able to:

- Identify and develop operational research models from the verbal description of the real system.
- Explore the mathematical tools that are needed to solve optimization problems.
- Develop critical thinking and use PERT and CPM techniques to improve decision making.

SYLLABUS OF GE-5

UNIT – I: Introduction - Operations Research, Linear Programming (15 hours)

(i) Introduction to Operations Research, characteristics, Phases, Methodology, Applications and scope

(ii) Formulation of Linear Programming problems, Graphical Solutions (Special cases: Multiple optimal solution, infeasibility, unbounded solution); Simplex Method, Special cases, Big-M method and Two-phase method; Duality (emphasis on formulation & economic interpretation); Sensitivity Analysis. (Excel Solver application)

UNIT – II:Transportation and Assignment Problem (12 hours)

(i) Transportation Problem: Formulation, Solution by N.W. Corner Rule, Least Cost method, Vogel's Approximation Method (VAM), Modified Distribution Method; Special cases: Multiple Solutions, Maximization case, unbalanced case, prohibited routes.

(ii) Assignment Problem: Hungarian Method, Special cases: Multiple Solutions, Maximization case, Unbalanced case, Restrictions on assignment.

UNIT – III: Network Analysis **(9 hours)**

Basic Concept, Construction of the Network diagram, Critical Path Analysis, float and slack analysis (Total float, free float, independent float), probability consideration in PERT (Interface with Project Management open-source software)

UNIT – IV: Decision Theory: **(9 hours)**

Decision making environment, Construction of Pay off Table, Opportunity Loss Table, Decision under uncertainty. Decision under Conflict: Game Theory, Two-person Zero-Sum games, Maximin Minimax Principle, Games without Saddle point - Mixed strategy, Dominance Rule.

Essential/recommended readings

1. Vohra, N.D., Quantitative Techniques in Management (5th ed.). Tata McGraw Hill
2. Swarup, K., Gupta, P.K. and Mohan, Man, Introduction to Management Science Operations Research (19th ed.). Sultan Chand & Sons.
3. Sharma, J.K., Operations Research: Theory and Applications (6th ed.). Trinity.
4. Taha, H.A., Operations Research: An Introduction (9th ed.). Pearson.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-7): ECONOMICS OF STARTUPS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Economics of Startups (GE 7)	4	3	1	0	Class 12	None

Learning Objectives

To apprise students:

- To give an overview of startups and its types that would help students to understand basics of starting up new ventures.
- To build and create a successful Business Plan
- To understand various Business models and learn startups
- To familiarize with central and state level institutions supporting small business entreprises.

Learning outcomes

By studying this course, students will be able to:

- Demonstrate the process and working of a startup.
- Identify the different ways in which entrepreneurs manifest in start-ups.
- Understand to create one's own business venture and the various factors that influence successful set-up and sustainable operations.
- Explore the funding and other institutions supporting small business units.

SYLLABUS OF GE-7

UNIT – I: Startup, Generation & Experimentation (9 hours)

Concept of Startup, Role of digital technologies, Startup ecosystems, the startup movement in India; Generating a value proposition, how valuable are new ideas, Design thinking principles; Experimenting with the prototype, Introduction to lean start-ups, Lean startup principles, Learning and failing fast.

UNIT – II: Building the Business Plan (15 hours)

Beginning Considerations: Building a competitive advantage. The strategic management processes. Conducting a feasibility analysis. Forms of Business ownership. Franchising and entrepreneurship. Buying an existing business, marketing and financial considerations: Building a powerful marketing plan. E-commerce and Entrepreneur. Pricing strategies. Creating a successful financial plan. Choosing the right location and layout.

UNIT – III: Crafting business models and Lean Start-ups (12 hours)

Introduction to business models; Creating value propositions-conventional industry logic, value innovation logic; customer focused innovation; building and analysing business models; Business model canvas, Business Pitching.

UNIT – IV:Institutions Supporting Small Business Enterprises and Ethics (9 hours)
Central level institutions. State level institutions. Other agencies. Industry Associations. Class exercise- discussions on current government schemes supporting entrepreneurship and finding out which scheme will most suit the business plan devised by the student. Importance of Ethical Entrepreneurship, value of ethics to an entrepreneur.

Essential/recommended readings

1. Scarborough, N. M., Cornwall, J. R., &Zimmerer, T. (2016). Essentials of entrepreneurship and small business management. Boston. Pearson Publications.
2. Hisrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A., Entrepreneurship, Tata McGraw Hill.
3. Shukla, M.B., Entrepreneurship and Small Business Management. Kitab Mahal Publishers.

Suggestive readings

1. Hishrich, R.D. and Peters, M. Entrepreneurship. Irwin Publications.
2. Barringer, B.R. and Ireland, R. Duane. Entrepreneurship: Successfully launching new ventures. (6th Edition) Pearson
3. Kuratko, D.F., and Rao, T.V., Entrepreneurship: A South-Asian Perspective. Cengage Publications.
4. Shankar, R., Entrepreneurship: Theory and Practice. Tata McGraw Hill.
5. Kathleen, R Allen. Launching New Ventures: An Entrepreneurial Approach. Cengage Learning.
6. Fisher, Steve and Duane, Ja-Nae. The Startup Equation - A Visual Guidebook for Building Your Startup. Mc Graw Hill Education India Pvt. Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-9): INTERNATIONAL ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
International Economics (GE9)	**4**	**3**	**1**	**0**	**Class XII**	**NA**

Learning Objectives

This course aims at inculcating:

- Basic understanding of fundamentals of international Trade
- An overview of theories of international trade
- Understand the meaning of Balance of Payment and explore the reasons of disequilibrium.
- Determine exchange rates and understand global capital market

Learning outcomes

By studying this course, students will be able to:

- To explain basic concept and origin of International economics through the prism of classical and new classical trade theories
- To explore different terms of trade and their applicability
- To differentiate between Modern and Classical Trade theories.
- To describe the foreign exchange markets and its working
- To analyse global capital market

SYLLABUS OF GE-9

UNIT – I: Introduction to International Trade [12hours]

Globalization and its growing importance in the world economy; Impact of globalization; International business contrasted with domestic businesses; Cost and benefit analysis of tariff, Effective rate of protection and welfare arguments of tariff and developing countries. Foreign direct investment (FDI) in world economy: Trends, Direction, and flow of FDI; Theories of FDI; Political ideology and FDI.

Unit 2: International Trade Theory [15hours]

World Trade: An overview; Theories of international trade – Mercantilism; Absolute advantage theory, Comparative advantage theory, Factory proportion theory and Leontief paradox, Product life cycle theory, New trade theory, National competitive advantage: Porter's diamond. International Business Environment: Economic, Demographic, Cultural and Political-legal environment.

Unit 3: Balance of Payment (BoP) [6hours]

Balance of Payment: Meaning, Components (Current, Capital and Official reserve), Reasons for disequilibrium in BoP, Measures to correct disequilibrium, Understanding India's BoP and comparing it with markets like USA and China.

Unit 4: Foreign Exchange and Global Capital Market [12hours]

Exchange Rate Determination: Currency Demand and Supply Curves, Factors Affecting Exchange Rate, Global Capital Market: Introduction, Benefits of global capital market, Growth of global capital market, Global capital market risk, Eurocurrency market, Global bond market, Global equity market, Exchange rate risk, Managing exchange rate risk, Methods of Financing International Trade.

Essential/recommended readings

1. Hill, C. (2021). International business: Competing in the global market place (13th Edition). *Strategic Direction*.

2. Krugman, P. R., & Obstfeld, M. (2009). International economics: Theory and policy. Pearson Education.

3. Levi, M.D. (2009). *International Finance* (5th Edition), Taylor and Francis Ltd.

4. Madura, J. (2020). *International financial management*. Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-11): ECONOMIC POLICY FRAMEWORK

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Economic Policy Framework (GE11)	4	3	1	0	Class 12	None

Learning Objectives

This course will help students

- to understand the importance, meaning and objective of macroeconomic policies
- to explore role and effect of fiscal policy and government expenditure
- to explore role of monetary policy and banking sector in India
- to analyseefficacy of fiscal/monetary policy under fixed and flexible exchange rate

Learning outcomes

By studying this course, students will be able to:

· Explore the basic concept of macroeconomics

· Comprehend different parameters of macroeconomics work under Indian economy.

· Analyse and Compare the monetary and fiscal policy.

· Compare different exchange rate regimes.

SYLLABUS OF GE-11

UNIT – I: Meaning and objectives of economic policy (8 hours)

Tools and goals (objectives and instruments of policy) Circular flow of income (start with a two sector model and go up to a five sector model); National Income aggregates and the related concepts of national income; input-output table to calculate national income using the income, expenditure and the value added methods.

Unit 2: Fiscal policy (15 hours)

Objectives and meaning; effect of fiscal policy - role of tax policy (T) and government expenditure (G), Aggregate Demand, Meaning of the multiplier. Government expenditure multiplier and balanced budget multiplier Budget –meaning and purpose – example of India's latest Budget (and various heads). Meaning of fiscal, revenue and primary deficits.

Unit 3: Monetary policy (12 hours)

Meaning and objectives; money and credit – credit creation and instruments of credit control; Inflation targeting, Banking in India – structure, recent developments; issues of NPAs and how to resolve it.

Unit 4: Exchange rate policy **(10 hours)**

Structure of BOP; meaning of current account deficit and trade deficit; exchange rate definition (real and nominal); fixed vs flexible exchange rate, efficacy of fiscal/monetary policy under fixed and flexible exchange rate , effect of a change in exchange rate on the current account (imports and exports); structure of capital account and role of capital outflows and inflows.

Essential/recommended readings

1 Gupta G.S (2016), Macroeconomics - Theory and Applications (4th edition). McGraw Hill,

2. Shapiro, Edward (1982), Macroeconomic Theory, 5th edition

3. Mankiw, Gregory N. (2010), Macroeconomics (7th edition), Worth Publishers.

4. Sikdar, Soumyen (2011), Principles of Macroeconomics, Oxford University Press

5. Krugman, P.R., Obstfeld, M. and Melitz, M. (2015). International Economics: Theory and Policy, Pearson Education Limited.

6. Dua, P. (2020). Monetary Policy Framework in India, Indian Economic Review, 55(1), June 2020, pp. 117-154.

9. http://www.inclusivejournal.in/about.html.

10. Sengupta, R. and Vardhan, H., Non-Performing Assets in Indian Banks, Economic and Political Weekly, 52(12) March 25, 2017, Money, Banking and Finance Special.

11. Economic Survey, India, latest issue

12. Union Budget Statement, India, Latest issue

Suggestive readings

1 Abel, Andrew, Bernanke, Ben and Croushore, Dean (2011). Macroeconomics (7th edition). Pearson

2. Ghate, C., &Kletzer, K. M. (eds.) (2016). Monetary policy in India: A modern macroeconomic perspective. Springer.

3. Kaul, Vivek (2020) Bad Money: Inside the NPA Mess and how it threatens the Indian Banking System, Harper Collins Publisher India.

4. Chhibber, Ajay and Anees, Salman Soz (2021) India's Financial Sector: A Whodunnit. In Unshackling India. Haper Collins Publishers India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Annexure-1

Based on Undergraduate Curriculum Framework 2022

UNIVERSITY OF DELHI

UNDERGRADUATE PROGRAMMES OF STUDY

STRUCTURE, COURSES & SYLLABI OF SEMESTER VIII

SEMESTER -VIII

B.A. (HONOURS) BUSINESS ECONOMICS

दिल्ली विश्वविद्यालय
University of Delhi

परिषद शाखा - I, कमरा नं: 212, नया प्रशासनिक खंड, दिल्ली विश्वविद्यालय, दिल्ली-110007, दूरभाष: 011-27001156/54
Council Branch - II, Room No. 211, New Administrative Block, University of Delhi, Delhi – 110007, Ph: 27001156/54

CNC-II/093/1/EC-1276/2025/12
Dated: 31.07.2025

NOTIFICATION

Sub: Amendment to Ordinance V

(ECR 24-8 & 24-9 dated 12.07.2025)

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

The following Syllabi under Faculty of Applied Social Science and Humanities based on Undergraduate Curriculum Framework 2022, are notified herewith for the information of all concerned:

1. The DSC and DSE papers for the B.A. (Hons) Business Economics-Semester-VIII based on Undergraduate Curriculum Framework 2022 (ECR 24-8 dated 12.07.2025) - **Annexure-1.**
2. The syllabus of B.Voc. Software Development - Semester-VII/ VIII based on Undergraduate Curriculum Framework 2022 (UGCF) (ECR 24-9 dated 12.07.2025) - **Annexure-2.**

REGISTRAR

COURSES OFFERED BY DEPARTMENT OF FINANCE AND BUSINESS ECONOMICS, FACULTY OF APPLIED SOCIAL SCIENCES AND HUMANITIES

Category I

Business Economics Course for Undergraduate Programme of study with Business Economics as a Single Core Discipline

(B.A. Honours in Business Economics)

DISCIPLINE SPECIFIC CORE COURSES

Code	Semester	Course Name	Credits	Instruction	Page
DSC - 20	VIII	Time Series Econometrics	4	3L + 1P	

DISCIPLINE SPECIFIC ELECTIVE COURSES

Code	Semester	Course Name	Credits	Instruction	Page
DSE - 2	Even	Public Finance (Already Passed)	4	3L+1T	
DSE - 4	Even	Advertising Management (Already Passed)	4	3L+1T	
DSE - 6	Even	International Financial Management (Already Passed)	4	3L+1T	
DSE - 8	Even	Behavioural Economics (Already Passed)	4	3L+1T	
DSE - 10	Even	Indian Economy (Already Passed)	4	3L+1T	
DSE - 14	Even	Financial Risk Management	4	3L+1T	
DSE - 16	Even	Marketing Analytics	4	3L+1P	
DSE - 18	Even	Business Tax Planning	4	3L+1T	
DSE - 20	Even	Strategic Management	4	3L+1T	

GENERIC ELECTIVE COURSES

Code	Semester	Course Name	Credits	Instruction	Page
GE-2	Even	Introduction to Digital Marketing (Already Passed)	4	3L+1T	

GE-4	Even	Statistics for Business (Already Passed)	4	3L+1P	
GE-6	Even	Introduction to Finance (Already Passed)	4	3L+1T	
GE-8	Even	Environmental Economics and Climate Change (Already Passed)	4	3L+1T	
GE-10	Even	Indian Financial System (Already Passed)	4	3L+1T	
GE-12	Even	Basic Econometrics (Already Passed)	4	3L+1P	
GE-13	Even	Principles of Macroeconomics (Already Passed)	4	3L+1T	

DISCIPLINE SPECIFIC CORE COURSE – 20 (DSC-20): TIME SERIES ECONOMETRICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical		
Time Series Econometrics (DSC 20)	**4**	**3**	**0**	**1**	**Class 12**	**Prior knowledge of basic econometrics**

Learning Objectives

The course aims:

- To develop a comprehensive set of tools and techniques for analyzing various forms of univariate and multivariate time series.
- To learn the skills needed to do empirical research in fields operating with time series data sets.
- To apply key concepts of estimation and forecasting in a time series context.
- To illustrate the theoretical results using software to estimate time series models

Learning Outcomes

By studying this course, the students will be able to:

- To apply ideas to real time series data and interpret outcomes of analyses
- To demonstrate advanced understanding of the concepts of time series and their application to health, climate, finance and other areas.
- To select an appropriate regression model to analyze a given time-series economic data set, and then conduct forecasting and statistical inference and interpret the results.
- To present their understanding of certain economic problems, and use empirical results to justify their explanation.

SYLLABUS OF DSC-20

Unit 1 **(9 hours)**

Introduction to time series: Exploring time series data patterns; Exploring data patterns with autocorrelation analysis; Decomposition of time series; Choosing a forecasting technique; Measuring Forecasting Error.

Unit 2 **(18 hours)**

Moving Averages and Smoothing Methods: Naïve Models: Forecasting based on averages; Exponential Smoothing Methods; Seasonally adjusting data. Properties of Stochastic Time Series:

Autocorrelation function; Stationarity; Random Walk; Testing for stationarity (unit root tests); Co-integrated Time Series.

Unit 3 **(9 hours)**

Linear Time Series: Moving Average models; Autoregressive Models; Box-Jenkins methodology; Mixed autoregressive and moving average (ARMA) models. Forecasting with ARMA/ARIMA models; properties of ARIMA forecasts.

Unit 4 **(9 hours)**

Regression with time series data; Conditional and Unconditional forecasting; Testing for causality; Vector Autoregressive (VAR) Models.

Practical Component (15 practical sessions; total 30 Hours): Practical to be based on econometrics packages such as Python/Eviews/R/Stata. The student is expected to conduct an end-to-end modelling journey which involves analyzing time ordered data, test for stationarity, forcasting and residual diagnostics for model validation. An econometrics-based project to be taken up to constitute the end-term practical examination.

References:

Essential

1. Hanke, John E. and Dean W. Wichern (2005). Business Forecasting. 8th Edn. New Delhi: Pearson-Prentice Hall.

2. Makridakis, Spyros, Steven C. Wheelwright and Rob J. Hyndman (1998). Forecasting: Methods and Applications. 3rd Edn. USA: John Wiley and Sons.

Additional

1. Asteriou, D and Hall, S.G. Applied Econometrics, (4th Edition). Red Globe Press

2. Stock, J. and Watson, M. Introduction to Econometrics (4th edition) Pearson

3. Tsay, RS and Chen Rong. Nonlinear Time Series Analysis. Wiley Publications.

DISCIPLINE SPECIFIC ELECTIVE COURSE 14 (DSE-14): FINANCIAL RISK MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Financial Risk Management (DSE 14)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course aims at:

- To understand various types of financial risks (market, credit, liquidity, operational, etc.) faced by business and financial institutions.
- To learn necessary tools to measure, quantify, and assess financial risks using both qualitative and quantitative techniques.
- To develop, design and implement effective risk management strategies, including the use of financial instruments such as derivatives, hedging, and diversification.
- To apply theoretical knowledge to real-world financial risk scenarios, enabling them to make informed decisions in dynamic market environments.

Learning outcomes

By studying this course, the students will be able to:

- Identify different types of financial risks (market, credit, liquidity, operational) and understand their potential impact on businesses and markets.
- Develop proficiency in using various risk measurement tools and models to quantify financial risk exposure.
- Assess and implement strategies for mitigating financial risks, such as diversification, hedging, insurance, and the use of financial derivatives.
- Make informed and well-structured risk management decisions in real-world contexts, applying their knowledge to optimize financial stability and performance.

SYLLABUS OF DSE-14

Unit 1: Risk Incorporation in Projects **(15 hours)**

Inflation adjustment and Adjusted Cost of Capital. Conventional Risk Handling techniques in Capital Budgeting: Sensitivity Analysis, Risk Adjusted Discount Rate, Certainty Equivalent, Simulation. Statistical Techniques to handle risk in Capital Budgeting: Standard Deviation, Coefficient of Variation, Probability Distribution *(Cash Flows are independent, fully dependent and partially dependent on other cash flows)*, Decision Trees.

Unit 2: Risk Management in Derivatives **(12 hours)**

Meaning and Types, Stock Futures, Forwards & Options, Commodity Futures, Weather Derivatives, Hedging/Risk Management through stock futures and payoffs, Stock Options: In the money, At the Money and Out of Money, Payoffs under Stock Options Margin Adjustment for futures., Intrinsic Value, Simple Stock, Futures and Options Combination Strategies (Neutralizing the risk, Spread, Straddle, Collars, Covered call). Interest Rate Swaps.

Unit 3: Risk Management through Pricing of Derivatives (9 hours)

Pricing of Forwards, Option Pricing using Binomial Model and Black Scholes Model, Put Call Parity Equation, Option Greeks: Meaning and Order of Greeks, Delta of European Stock Options, Delta and Black Scholes Model, Delta Hedging. Sensitivity of an Option: Vega, Theta , Rho & Lamda. Hedging through Gamma & Vega, Making a Portfolio Gamma Neutral, Gamma's relation with other Greeks.

Unit 4: Credit Rating and Risk Management in Insurance (9 hours)

Credit Rating: Credit rating in the banking sector, questionnaire method, 'Z' Score, Sensitivity and Transition Probability Matrix, CIBIL. Insurance: Premium Determination for Life: Endowment and Term Policies and Non-Life Policies, Use of Mortality Tables.

References

Essential

1. Hull. J.C & Basu S., Futures Options and Other Derivatives. Pearson Education
2. Vohra, N.D. & Bagri, B.R., Futures and Options, Tata McGraw-Hill.
3. Rustagi, R.P., Investment Management. Sultan Chand & Sons.
4. Financial management, R .P Rustagi, McGraw Hill

Additional

1. Parameswaran, S., Futures and Options. Tata McGraw Hill.
2. Bodie, Zvi., Kane, Alex & Marcus, Alan J., Investments, McGraw Hill.
3. Benninga, Simon, Financial Modelling with Excel, MIT Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 16 (DSE-16): MARKETING ANALYTICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Marketing Analytics (DSE 16)	**4**	**3**	**0**	**1**	**Class 12**	**None**

Learning Objectives

The course aims to provide an understanding to:

- Market data for informed decision-making.
- Analyse to enhance marketing strategies and performance.
- Assess and improve ROI across marketing efforts.
- Gain proficiency in key marketing analytics tools and methods.

Learning outcomes

By studying this course, the students will be able to:

- Understand the meaning of consumer research and marketing analytics.
- Learn demand analysis and allocation through linear programming as well as analyse advertising effectiveness using causal research.
- Analyse consumer perception using cluster and factor analysis.
- Learn a variety of metrics to enhance customer acquisitions online.
- Conduct analysis of big data for digital analytics in customer journey, touch points and social networks.

SYLLABUS OF DSE-12

Unit 1: Introduction **(12 hours)**

Adoption and application of marketing analytics: AIDA, CRM; Consumer research intelligence: descriptive, exploratory, predictive and prescriptive analytics; Processes followed in typical marketing analytics projects. Advertising Analytics**:** Advertising elasticity of demand, Promotion allocation through linear programming; Advertising effectiveness using causal research, experimental design (Univariate Analysis of Variance) and test markets;

Unit 2: Consumer Perception and Preference **(12 hours)**

Consumer perception analysis using factor and cluster analysis; multi-dimensional scaling for brand perception; Consumer attribute preference using conjoint analysis;

Unit 3: Customer Acquisition Metrics **(12 hours)**

Lead generation metrics, Customer activity metrics, Customer survival analysis-Kaplan Meir Curve and Cox proportional hazards regression, Brand Awareness Recall, Test- drive, Churn, Customer Satisfaction (CSAT), Take Rate, Profit, Net Present Value, Internal Rate of Return, Payback, Cost Per Click (CPC), Transaction Conversion Rate (TCR), Return on Ad Money Spent (ROA), Bounce Rate, WOM (social media reach), Customer Lifetime Value (CLTV).

Unit 4: Digital Analytics: Big Data **(9 hours)**

Web analytics, Customer journey analysis, Customer touchpoint attribution modeling, Dynamic targeting, Integrated big data models, Social listening, Social network analysis.

Practical Component (15 practical sessions; total 30 hours): Practical component of this course equips students with hands-on experience in using data analytics tools to solve real-world marketing problems. Through software-based exercises using SPSS/ Python, students learn to analyze customer data, conduct segmentation, forecast sales, and evaluate campaign effectiveness. Case-based datasets and live dashboards enable learners to apply theoretical concepts in a practical setting. A project on marketing is to be taken up to constitute the end-term practical examination.

References:

Essential

1. Maity, M., Guruzada, P., Marketing Analytics - For Strategic Decision Making. Oxford University Press.
2. Jeffery, Mark. Data-Driven Marketing: The 15 Metrics Everyone in Marketing Should Know. John Wiley & Sons Inc. (Chapter- 4, 5, 6, 7, 8, 9)
3. Verhoef, P., Kooge, E. and Walk, N. (2016). Creating Value with Big Data Analytics- Making Smarter Marketing Decisions. Routledge. New York.

Additional

1. Hemann, C. and Burbary K., Digital Marketing Analytics: Making Sense of Consumer Data in a Digital World. Pearson Education.
2. Venkatesan, R., Farris, P. & Wilcox, R.T. (2018), Cutting Edge Marketing Analytics - Real World Cases and Data Sets for Hands On Learning. Pearson Education Inc.
3. Sorger, Stephan. Marketing Analytics: Strategic Models and Metrics. CreateSpace Independent Publishing Platform.
4. Kotler, Philip., Kartajaya, Hermawan., Setiawan, Iwan. Marketing 4.0: Moving from Traditional to Digital. John Wiley & Sons Inc.
5. Nargundkar, Rajendra., Sainy, Romi. Digital Marketing: Cases from India. Notion Press.
6. Field, Andy. Discovering Statistics using IBM SPSS Statistics. 5th Edition, SAGE Publications.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 18 (DSE-18): BUSINESS TAX PLANNING

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Business Tax Planning (DSE 18)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course aims to provide an understanding to:

- Grasp key business tax principles and regulations.
- Develop strategies to minimize tax liabilities legally.
- Analyze the tax impact of business decisions.
- Use practical tax planning methods to optimize business tax positions.

Learning outcomes

By studying this course, the students will be able to:

- Identify the difference between Tax Evasion and Tax Planning.
- Describe how the provisions in the corporate tax laws can be used for tax planning.
- Understand the principles underlying the indirect taxation statutes with reference to Goods and Services Act.
- Compute the assessable value of transactions related to goods and services for levy and determination of duty liability.

SYLLABUS OF DSE-12

Unit 1: Tax Planning and Management **(9 hours)**

Tax Planning – Meaning, Features, Scope, Importance and Objectives; Difference between Tax Planning, Tax Avoidance and Tax Evasion; Tax Management – Meaning, Difference between Tax Planning and Tax Management; Problems of Tax Planning and Tax Management; Tax Planning for Corporate Entities – Tax Incentives, Tax Rebates, Tax Holidays, Concept of Minimum Alternate Tax (MAT), Tax on Distributed Profits of Domestic Companies.

Unit 2: Tax Planning For Financial Management Decisions **(12 hours)**

Tax Planning for Capital Structure Decision, Dividend Policy and Dividend Distribution Tax, Inter-Corporate Dividends and Bonus Shares, Tax Provisions Relating to Free Trade Zones, Infrastructure Sector and Backward Areas, Tax Deductions and Collection at Source, Advance Payment of Tax.

Unit 3: Introduction of Goods and Services Tax (GST) **(15 hours)**

Constitutional Framework of Indirect Taxes before GST, Rationale of GST, Dual GST Model, Structure of GST (SGST, CGST, UTGST & IGST), Supply of Goods and Services, Place of Supply – Intra-State,

Inter-State, Import and Export, Time of Supply, Valuation for GST, Exemption from GST – Small Supplies and Composition Scheme.

Unit 4: Input Tax Credit, Procedures and Special Provisions under GST (9 hours)

Input Tax Credit (ITC) – Meaning, Eligible and Ineligible Input Tax Credit, Blocked Credits, Tax Credit in respect of Capital Goods, Recovery of Excess Tax Credit, Transfer of Input Credit, Payment of Taxes, Doctrine of Unjust Enrichment, Reverse Charge, Illustrations on Calculation of GST and ITC

Procedures and Special Provisions – Registration, Tax Invoice, Credit and Debit Notes, Returns, GST Audit, Self-Assessment, Summary and Scrutiny, Taxability of E-Commerce, Anti-Profiteering, Avoidance of Dual Control, E-Way Bills, Zero Rated Supply, Offenses and Penalties, Appeals.

(Note: In case of any amendment on GST by the Government of India, the syllabus would be updated accordingly.)

References:

1. Ahuja, Girish & Gupta, Ravi. Simplified Approach to Corporate Tax Planning and Management. Bharat Publications. New Delhi.
2. Singhania, Vinod K. Direct Tax Planning and Management. Taxmann Publications.
3. Bansal, K.M., GST and Customs Law. Taxmann Publications.
4. Singhania, V.K. GST and Customs Law. Taxmann Publications.
5. Ahuja, G., and Gupta, R. Systematic Approach to Indirect Taxation (Including GST and Customs). Commercial Law Publisher.

DISCIPLINE SPECIFIC ELECTIVE COURSE 20 (DSE-20): STRATEGIC MANAGEMENT

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Strategic Management (DSE 20)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course aims to:

- Understand the key concepts, models, and frameworks used in strategic management.
- Analyze internal and external business environments for effective strategy formulation.
- Evaluate strategic options and decision-making processes at the corporate and business level.
- Develop strategic thinking and planning skills relevant to real-world organizational challenges.

Learning outcomes

By studying this course, the students will be able to:

- Explain core strategic management theories and their practical relevance.
- Demonstrate the ability to conduct SWOT and competitive analyses.
- Critically assess and compare alternative strategic choices for organizations.
- Apply strategic tools to formulate and present viable business strategies.

SYLLABUS OF DSE-20

Unit 1: Introduction to Strategic Management (3 hours)

Concept of Strategy & Strategic Management, Strategic Intent, Vision and Mission Statements, Strategic Management Process, Reasons for Strategy Failure, Value of Strategic management, Types of Strategies, Limitations of Strategic Management.

Unit 2: Environmental Analysis & Diagnosis (9 hours)

Strategy Analysis: Environmental Appraisal and Scanning Techniques, Need and Characteristics of environmental factors. Analysis of specific environment: Michael E. Porter's 5 Forces Model. Organisational Position and Strategic Advantage Profile, Internal Environment: Value of Systematic Internal Assessment, Profile of Company's Strengths and Weaknesses. SWOT, Michael Porter's Value Chain Analysis, Core Competencies, Core Capabilities and Competitive Advantage, 3 C's Model.

Unit 3: Strategy Formulation, Implementation & Control (24 hours)

Strategy formulation: Formulating Long-Term Objectives and Grand Strategies. Types of Strategies – Corporate Strategy, Business Strategy, Functional Strategy. Strategic Analysis and Choice: Strategic

Analysis at the Corporate Level. Grand Strategy Selection Matrix. Contingency Approach to Strategic Choice, Porter's Competitive Strategies, Portfolio Analysis, BCG Growth Share Matrix, GE Matrix.

Strategy implementation and control: Operationalizing the Strategy Annual Objectives. Implementation procedure of Strategy in an organization. Linking structure to strategy. Organizational leadership. Organizational culture. Managing the Strategy-Culture relationship. Strategic Control and Evaluation: Establishing Strategic Controls. Operational control systems, Balanced Scorecard Methodology.

Unit 4: Global Strategic Management (9 hours)

Global Strategic Planning: Competitive strategies for firms in foreign markets, Strategic Choice in a Global Context. Managing Global Sourcing Opportunities. Strategic Alliances, Types of Strategic Alliances and Business Decisions, Problems Involved in Strategic Alliances.

References:

Essential

1. Thompson Jr., Arthur A. and Strickland, A.J. (2003). Strategic Management –Concepts and Cases. McGraw-Hill College.
2. Pearce, J.A. , Robinson, R.B. & Mital, Amita (2017) . Strategic Management: Formulation, Implementation and Control. McGraw Hill Education.

Additional:

1. David, Fred R. & David, Forest R. (2016). Strategic Management: Concepts and Cases—A Competitive Advantage Approach. Pearson Publications.
2. Hill, Charles, W.L. & Gareth, R. Jones (2012). Strategic Management: An Integrated Approach. Cengage Learning. India.
3. Kazmi, Azhar (2014). Strategic Management and Business Policy. McGraw Hill Education.
4. Jauch, Lawrence R. & Glueck, William F. (1988). Business Policy and Strategic Management. McGraw-Hill Inc-US.
5. Ghosh P. K. (2012). Strategic Planning and Management. Sultan Chand & Sons. New Delhi.
6. Wheelan, Thomas, L., Hunger, J. David, Hoffman, Alan N. & Charles E. Bamford (2014). Strategic Management and Business Policy: Globalization, Innovation and Sustainability. Prentice Hall, New Jersey.
7. Thompson Jr., Arthur A. and Strickland A.J. et al. (2020). Crafting and Executing Strategy: Concepts & Cases. Mc Graw Hill Education.
8. Kim, W. Chan & Maubourgne, Renee (2004). Blue Ocean Strategy. Harvard Business Review.
9. Rivkin, Jan W. & Ghemawat, Pankaj (2002). Creating Competitive Advantage. Harvard Business Review.
10. Porter, Michael E (1990). The Competitive Advantage of Nations. Harvard Business Review.
11. Porter, Michael E. (1985). Competitive Advantage. The Free Press. New York
12. Levitt, Theodor. (1983). Globalization of Markets. Harvard Business Review.
13. Porter, Michael E. (1996). What is Strategy?. Harvard Business Review.
14. Prahalad, C. K., & Hamel, G. (1990). The Core Competence of the Corporation. Harvard Business Review.

GENERIC ELECTIVES (GE-2): INTRODUCTION TO DIGITAL MARKETING

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE DEPARTMENTS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Digital Marketing (GE 2)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

This course aims to acquaint the students with:

- Key marketing principles and terminology.
- Evolving digital landscape and the strategic role of digital marketing processes and tools in designing the overall Marketing strategy.
- Methodologies, tools and technologies involved in digital marketing.
- Importance of search engines and their role in digital marketing ecosystem.

Learning outcomes

By studying this course, students will be able to:

- Understand the concept of digital marketing and its integration with traditional marketing.
- Understand customer value journey in digital context and behaviour of online consumers.
- learn email, content and social media marketing and apply the learnings to create digital media campaigns.
- Examine various tactics for enhancing a website's position and ranking with search engines and search advertising.

SYLLABUS OF GE-2

Unit 1: Fundamentals of Marketing **(6hours)**

Importance of marketing; Core marketing Concepts; Company Orientations; Concept of Segmentation, Targeting-Positioning; 7 P's Framework; Product Life cycle; Pricing strategies, Types of distribution channels; Promotion Mix.

Unit 2: Marketing in the Digital World **(9 hours)**

Digital marketing: Concept, Features, Difference between traditional and digital marketing, Moving from traditional to digital Marketing; Digital Marketing Channels: Intent Based- SEO, Search

Advertising; Brand Based- Display Advertising; Community Based-SMM; Others- Affiliate, Email, Content, Mobile; Customer Value Journey: 5As Framework; The Ozone O_3 Concept Key; Traits of online consumer.

Unit 3: Content, Email and Social Media Marketing (15 hours)

Content Marketing: Developing a content marketing strategy; Email Marketing: Types of Emails in email marketing, Email Marketing best practices; Social Media Marketing: Building Successful Social Media strategy; Social Media Marketing Channels; Facebook, LinkedIn, YouTube (Concepts and strategies)

Unit 4: Search Marketing (15 hours)

Introduction of SEM: Working of Search Engine; SERP Positioning; Search Engine Optimization: Overview of SEO Process; Goal Setting-Types

On-Page Optimization: Keyword Research, SEO Process -Site Structure, Content, Technical Mechanics, Headings, Image & Alt text, Social Sharing, Sitemaps, Technical Aspects-Compatibility, Structured Data Markup.

Off Page Optimization: Link Formats, Link Building, Content Marketing, Social Sharing; Black and White Hat Techniques

Search Advertising: Overview of PPC Process; Benefits of Paid Search; Basis of Ranking; Goal Setting-Objectives; Account Setting-Creation of Google Ads, Campaign architecture, Campaign setup, Targeting, Bid Strategy, Delivery, Ad Scheduling, Ad Rotation, Keyword Selection; Ad Copy composition, Ad Extension

Overview of Display Advertising: Working of Display Advertising; Benefits and challenges.

Essential/recommended readings

1. Dodson, I. (2016). The art of digital marketing: the definitive guide to creating strategic, targeted, and measurable online campaigns. John Wiley & Sons.
2. Kartajaya, H., Kotler, P., &Setiawan, I. (2016). Marketing 4.0: moving from traditional to digital. John Wiley & Sons.
3. Ryan, Damien. Understanding Digital Marketing - Marketing Strategies for Engaging the Digital Generation. Kogan Page Limited.

Additional References:

1. Kotler, P. (2009). Marketing management: A south asian perspective. Pearson Education, India.
2. Maity, Moutusy. Internet Marketing: A practical approach in the Indian Context. Oxford Publishing.
3. Gupta, Seema. Digital Marketing. McGraw Hill
4. Ultimate guide to digital Marketing. Digital Marketer

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4): STATISTICS FOR BUSINESS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Statistics for Business (GE4)	**4**	**3**	**0**	**1**	**Class 12**	**Mathematics at Class 12 level**

Learning Objectives

The objective of this course is to enable students to:

- Describe data using summary statistics.
- Develop detailed understanding of discrete and continuous distributions.
- Develop skills in statistical computing, statistical reasoning and inferential methods.
- Comprehend and analyse real data like real indices.

Learning outcomes

By studying this course, students will be able to:

· Learn tools and concepts of statistical analysis and interpretation.

· Comprehend fundamentals of probability theory.

· Develop skills in statistical computing, statistical reasoning and inferential methods.

· Comprehend and analyse real data like real indices.

SYLLABUS OF GE-4

Unit 1: Descriptive Statistics and Exploratory Data Analysis (15 hours)

Types of Variables (Quantitative, Qualitative, discrete, continuous), Scales of Data Measurement (nominal, ordinal, Interval & Ratio), Variable-; Primary & secondary Data.

Frequency distributions, Relative Frequency, Cumulative Distributions, Percentiles, Quartiles; Graphical representation of data- bar charts, pie, histograms, box plots.

Measures of central tendency: Mean, median, mode, Geometric Mean, Harmonic Mean, Weighted Mean & their properties. Selection of a measure of central tendency.

Measures of Dispersion: Range, inter-quartile range, quartile deviation, mean deviation, standard deviation, variance, coefficient of variance, properties of standard deviation, merits & demerits.

Skewness and Kurtosis: Meaning, measures- Karl Pearson, Bowley, Kelly's, Kurtosis- meaning, Moments, Kurtosis

Bivariate Analysis: Cross-tabulations and Scatter diagram; Correlation, Association and Simple Regression.

Unit 2: Probability (12 hours)

Axioms of probability; Review of counting rules, experiments, sample space, simple and complex events; Addition and multiplication rules; Concepts of Mutually exclusive events, independent events; Concepts of Joint, marginal and conditional probability; Permutation and Combinations

Concept of Discrete and continuous Random Variables; Expected value and variance; Examples of Theoretical Discrete and Continuous Probability Distributions – Binomial, Poisson and Normal distributions.

Unit 3: Sampling, Estimation and Hypotheses (15 hours)

Population versus Sample; Sample Statistics versus population parameters; Definition and Statistical properties of a Random Sample; Point and Interval Estimation and Small Sample Properties of Estimators (unbiasedness, efficiency); Central Limit Theorem. (Interval estimation for mean for large samples)

Basic concepts of Hypotheses Testing: Formulation of Null and Alternate Hypotheses; One-tailed and two-tailed Tests about population Mean; Concepts of Type I and Type II errors. (Hypothesis testing for mean and difference between mean for large samples only)

Unit 4: Index Numbers (6 hours)

Index Numbers: Use and construction of Laspeyres and Paasche index numbers; Fixed and chain base index numbers; Base shifting, splicing and deflating. Construction of real indexes: Consumer Price Index and BSE index.

Practical Component (30 hours) : Practicals to be based on a spreadsheet package (Microsoft Excel or equivalent) to enable the student to execute all the measures and tests taken up in the theory classes in the course.

Essential/recommended readings

1. Spiegel, M.R.(2003). Theory & Problems of Statistics, Schaum's outline series, McGraw Hill.
2. Levin, Richard I. and Rubin, David (1998). Statistics for Management (7th Edition), Pearson.
3. Gupta, S.C. (2018). Fundamentals of Statistics, Himalaya Publishing House
4. Spiegel, M. and Stephens, Larry (2017). Statistics (Schaum's Outline Series), Tata-Mcgraw-Hill, New Delhi

Suggestive readings

1 Nagar, A. L. and Das. R. K.. Basic Statistics (2nd Edition), Oxford University Press

2. Karmel, P. H. and Polasek, M. (1978). Applied Statistics for Economists (4th edition), Pitman.
3. Larsen, Richard J. and Marx, Morris L. (2011). An Introduction to Mathematical Statistics and its Applications. Prentice Hall.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6): INTRODUCTION TO FINANCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Finance (GE6)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

This course aims at providing a comprehensive introduction to:

- Financial system and its primary constituents.
- Sources of finance and time value of money.
- Basics of Investment and various asset classes.
- Key concepts of international financial management.

Learning outcomes

By studying this course, students will be able to:

Understand the meaning, scope and sources of Finance

· Estimate the present and future values of assets

· Examine the relationship between risk and return, and the nature and sources of risk in a stock market context

· Analyse the currency exchange market to deal exchange rate risk.

SYLLABUS OF GE-6

UNIT – I: A Primer on Financial Markets & Institutions (9 hours)

An overview of financial system: characteristics & requirements. Components & functions of financial system. Financial markets: characteristics & types. Types & role of Financial Institutions.An overview of the 2007–2008 Financial Crisis.

Unit 2: Corporate Finance: An Overview (12 hours)

Nature, scope and objectives of Finance, Emerging role of Finance Managers in India and Agency problem.Concept & Meaning of Financial Management, goals of financial management, the three financial decisions- Investing, Financing & Dividend.

Sources of Finance: Equity & Preference Capital, Retained earnings, Debt, Bonds, Long term loans, Short term advances from banks, public deposits & advances from customers and trade creditors.

Concept of Time Value of Money, Compound Value, Present Value, Annuity and Perpetuity.

Unit 3: Investment Management: Basics & Process (15 hours)

An overview of investment- Investment process, Types of assets- real & financial.Types of investors, types of financial securities & attributes of a good investment.

Concept of Risk & Return (Single asset), risk-return trade off, types of risk- systematic & unsystematic, types of return-holding period return, expected return, actual return.

Examining four broad asset classes: equity, bonds, mutual funds & derivatives.

Equity- three schools of thought on equity valuation- a brief discussion on fundamental analysis, technical analysis and efficient market hypothesis.

Bonds- types, fundamentals, relationship between interest rates & bond prices& yield curve.
Mutual Funds– meaning, importance, structure, mutual fund schemes, Systematic Investment Plan (SIP), Systematic Withdrawal Plan (SWP), Exchange Traded Fund (ETF), Equity Linked Savings Scheme (ELSS) and NAV of Fund.
Derivatives – Meaning and Types of Derivative Instruments (Forwards, Futures, Options and Swaps). Concept of diversification & portfolios.Portfolio Risk & Return(two security only).

Unit 4: A Beginners' Guide to International Finance (9hours)

International Monetary System- development of international finance and how the international monetary system evolved. Currency exchange markets and rates- currency exchange markets, exchange rate quotations, currency exchange rate appreciation and, depreciation, factors that affect currency exchange rates and arbitrage. Conducting business internationally. Concept of exchange rate risk.

Essential/recommended readings

1. Bodie, Zvi., Kane, Alex and Marcus, Alan J.. Investments. McGraw Hill.
2. Chandra, P.. Security Analysis and Portfolio Management. Tata McGraw Hill.
3. Pathak, Bharati. Indian Financial System. Pearson.
4. Ronald, W. Melicher and Norton, Edgar A.. Introduction to Finance: Financial Markets, Investment, and Financial Management. Wiley Publishing House. 2012.
5. Rustagi, R.P., Fundamentals of Financial Management. Taxmann.

Suggestive readings

1. Khan, M. Y & Jain P. K., Financial Management: Text and Problems. Tata McGraw Hill. New Delhi.
2. Kohn, Meir. Financial Institutions and Markets. Oxford University Press.
3. Kidwell, David S., Backwell, David W., Whidbee, David A. and Sias, Richard W. Financial Institutions, Markets and Money. Wiley Publications.
4. Madura, Jeff. Financial Markets and Institutions. South Western Cengage Learning.
5. Reilly, Frank K, and Brown, Keith C. Investment Analysis and Portfolio Management. Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-8): ENVIRONMENTAL ECONOMICS AND

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Environmental Economics and Climate Change (GE8)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

This course aims at inculcating an understanding of:

- How economic activities are affecting the environment.
- Social value of environmental resources.
- Climate change and its consequences.
- Efficient and effective policy measures for protecting the environment.

Learning outcomes

By studying this course, students will be able to:

. · Understand the linkage between environment and economics.

· Learn the basic theories of environmental economics.

· Understand the basic terminologies related to environment and Climate change.

· Analyse the effects of climate change on India and its future plan for environmental protection and mitigation.

SYLLABUS OF GE-8

UNIT – I: Introduction (8 hours)
Introduction to Environmental Economics, Material Balance model- economy environmental interactions, reasons for environmental degradation (population, technology, GDP), balance between environment and growth.

Unit 2: Economic Growth and Environmental Degradation (12 hours)
Theories of relationship between economic growth and environmental degradation: The environmental Kuznets curve hypothesis, The Brundtland Curve hypothesis, The environment Daly Curve hypothesis.

Unit 3: Climate Change and its Challenges (12 hours)
Introduction to the Climate Change, Drivers of Climate Change, Global impacts of Climate Change: Anthropogenic, Global warming, ozone hole, biodiversity loss, ecosystem services, natural capital and resources. Effect of Climate Change on India: Agriculture, Biodiversity, vulnerability of Coastal Belt, Rural Livelihoods and Food Security in India.

Unit 4: Actions Taken and Policy Framework (13 hours)
Global Level: Adaptation and Mitigation, Governmental and Intergovernmental Actions to Combat Climate Change: The Role of the Intergovernmental Panel on Climate Change (IPCC), United Nations Framework Convention on Climate Change, The Kyoto Protocol, Paris Agreement etc. The global

carbon market (CDM, JI, ET).India's Position on International Climate Negotiations, India's National Action Plan on Climate Change.

Essential/recommended readings

1. Callen,Thomas (2007). Environmental Economics, Thomson Learning Inc. Indian Edition.
2. Dubash, Navroz (2012). Handbook of Climate Change and India: Development, Politics and Governance, Earthscan
3. Bhattacharya, R. N. (ed.) (2001). Environmental Economics, An Indian Perspective, Oxford University Press.

Suggestive readings

1. Romm, J.J. 2018. Climate change: What Everyone Needs to Know. Oxford University Press
2. Dash. S.K. 2008. Climate Change, Cambridge University Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-10): INDIAN FINANCIAL SYSTEM

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Indian Financial System (GE10)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course attempts to develop an understanding of:
(i) the history and role of the Indian Financial System in economic development
(ii) the role and importance of financial markets; capital, equity and money markets
(iii) commercial banks, development banks, NBFCs - risk and NPAs; role of ARCs.
(iv) role of financial services in credit market

Learning outcomes

By studying this course, students will be able to:

. Analyse the financial market processes and their factors, and make successful financial decisions at an individual as well as company level.

· Evaluate various ways of raising funds from the financial markets domestically or internationally for the company.

· Study the considerations of banking and other financial institutions in real life.

· Evaluate various financial services offered under financial system of India.

SYLLABUS OF GE-10

UNIT – I: Financial System: An Introduction (6 hours)

Financial System: meaning, characteristics, significance and components; tracing the history of the Indian financial system and its contribution to Economic Development; markets, regulators and participants in the Indian financial system; financial instruments, direct and indirect finance, scams in Indian Financial System.

Unit 2: Financial Markets (18 hours)

Financial Markets – meaning, types, role, importance, and securities traded; linkages between financial markets and economy. Capital market – meaning, functions, organisation; Equity market – primary and secondary market, ways of raising funds, private equity, venture capital, introduction to debt market. Money market – meaning, functions, organisation, participants, instruments, trading mechanism, role of central bank.

Unit 3: Financial Institutions (9 hours)

Commercial Banking, Nationalisation of Commercial Banks, Structure of Commercial Banks in India, Depository and Non-Depository Institutions, Universal Banking, Payments Bank, Development Banks (IFCI, IDBI, NABARD and NHB), NBFCs, Risk Management in Banks, ARCs Problem of NPAs.

Unit 4: Financial Services (12 hours)

Credit Rating – Meaning, Process, Rating Methodology, Rating Symbols and Rating Agencies.
Insurance – Meaning, Importance, Types, Seven Principles and Regulation.
Leasing – Meaning, Features and Types of Leasing; Concept of Hire Purchase, Difference between Hire Purchase and Leasing; Factoring – Meaning, Functions, Types and Procedure; Forfaiting – Meaning, Process, Characteristics, Types, Advantages, Difference between Forfaiting and Factoring; Investment Banking – Meaning, Importance and Services Offered by Investment Bankers.

Essential/recommended readings

1 Khan, M.Y. Indian Financial System. Tata McGraw Hill.

2. Bhole, L.M. Financial Institutions and Markets. Tata McGraw Hill.

3. Varshney, P.N. and Mittal, D.K. Indian Financial System. Sultan Chand & Sons.

4. Pathak, Bharati. Indian Financial System. Pearson Publications.

5. Shahani, Rakesh. Financial Markets in India: A Research Initiative. Anamica Publishing Co.

Suggestive readings

1. Gordon, E. &Natarajan, K. Financial Markets and Services. Himalaya Publishing House.

2. Gupta, Shashi, Aggarwal, Nisha and Gupta, Neeti. Indian Financial System.Kalyani Publishers.

3. Kumar, Vinod., Gupta, Atul. andKaur, Manmeet. Financial Markets, Institutions and Services, Taxmann Publications.

4. Madura, Jeff. Financial Markets and Institutions. South Western Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-12): BASIC ECONOMETRICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Basic Econometrics (GE12)	**4**	**3**	**0**	**1**	**Class 12**	**Knowledge of Inferential and descriptive Statistics**

Learning Objectives

The course intends to explain to the student:
(i) the classical linear regression model, OLS, its assumptions, testing and functional forms
(ii) the k-variable linear regression model, testing coefficients and ANOVA, and Restricted Least Squares
(iii) treatment of regressions involving qualitative regressors
(iv) the implications, detection and remedies in case of violation of classical assumptions

Learning outcomes

By studying this course, students will be able to:

. · Explain Key econometric concepts.

· Formulate simple econometric models

· Interpret the regression results obtained from software packages.

· Identify the errors in regression models and rectify the same.

· Analyse the suitability of the data for solving the problem at hand

SYLLABUS OF GE-12

UNIT – I: The Classical Linear Regression Model (12 hours)
Types of Data: Time Series, Cross Section and Panel Data. Concept of Population Regression Function and Sample Regression Function, Assumptions of the model, Derivation of Coefficients of Regression in a two-variable model, Estimation of the SRF using OLS, Analysis of variance and R squared.
Expectation and standard errors of the regression coefficients and the error term. Gauss Markov Theorem. Interval estimation and tests on population regression coefficients, variance of population disturbance term and forecasts. Testing the significance of the model as a whole. Testing the normality assumption.
Extensions of the Two Variable Linear Regression Model: Regressions through the origin, Scaling of Variables and Regression on Standardized Variables. Functional forms of Linear Regression Models: The double log, semi-log, reciprocal, log- reciprocal models with applications.

Unit 2: Multiple Regression Model (15 hours)

Coefficients of regression in a multi variable model and their properties. Interval estimation, tests on population regression coefficients and model significance. Correlations, Goodness of fit and the Adjusted R square. Hypothesis testing for significance of the contribution of a variable, structural stability, restricted least squares.

Unit 3: Dummy Variable Regression Models (6 hours)

Intercept, Slope Dummy variables. Interaction between qualitative variables.Interaction between quantitative and qualitative variables.Use of dummy variables in testing for structural change and for seasonal indices.

Unit 4: Relaxing the Assumptions (12 hours)
Introduction to multicollinearity, heteroscedasticity, autocorrelation and specification errors.The nature of the problem, its detection and corrective measures.
Practical Component (30 hours) **:** Practicals to be based on an econometric software (e.g. Gretl/SPSS/Stata/Eviews/PSPP). The student is expected to implement using the software all the regressions and tests noted in the syllabus.

Essential/recommended readings

1 Gujarati, D. and Sangeetha, N. (2007) Basic Econometrics. Fourth Edition, Tata McGraw-Hill, New Delhi

2. Dougherty, Christopher. (2011). "Introduction to Econometrics," Oxford University Press,

3. Wooldridge, J. M. (2006). Introductory econometrics: A modern approach. Mason, OH: Thomson/South-Western.

4. Manual of the relevant software

Suggestive readings

1. Asteriou, D., & Hall, S.G. (2011). Applied econometrics. Palgrave Macmillan.

2. Brooks, Chris (2008). Introductory Econometrics for Finance (2nd edition). Cambridge University Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. Honours Business Economics

Generic Elective Courses

GE -2: Principles of Macroeconomics

Course Title and Code	Credits	Credit distribution of the course			Eligibility Criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/Practice		
Principles of Macroeconomics	**4**	**3**	**1**	**0**	**Class XII**	**None**

Learning Objectives

This course aims at inculcating an understanding:

(i) key macroeconomic variables with a sound understanding of aggregate economic accounts and definitions.
(ii) the differences between real and nominal variables, how GDP is measured and its limited applicability to welfare.
(iii) equilibrium under different assumptions on aggregate demand and supply.
(iv) the relation between wages, prices, unemployment under different models
(v) the concept of open economy and how it determines the balance of payments, types of exchange rates.

Learning Outcomes
By studying this course, the students will be able to:

(i) understand the basic principles of and definitions of national income accounting and determination of GDP
(ii) understand basics of consumption function and different hypotheses regarding aggregate consumption behavior. ·
(iii) derive wage setting, price setting relations and labour market equilibrium. ·
(iv) learn about the key determinants of economic growth through the lens of the solow/neoclassical growth model and the difference between growth through capital accumulation and technological progress
(v) identify key macroeconomic indicators and measures of economic change, growth, and development.
(vi) apply economic theories and concepts to contemporary social issues, as well as formulation and analysis of policy.
(vii) apply basic international trade and finance concepts to global pricing issues, including working with exchange rates

Unit I: National Income and Production **[10 hours]**

Macroeconomic questions. National Income Accounts: circular flow, production income and expenditure. Limitations of GDP; real and nominal. Productivity and Incomes, Inequality of incomes and productivity and measurement. Aggregate production function and its representation. Determinants of technology.

Unit II: Economic Growth and Development **[5 hours]**

Growth and its patterns and its determinants. History of economic growth. Growth, inequality and poverty. Solow Growth Model.

Unit III: Macroeconomic Equilibrium **[15 hours]**

Measuring employment and unemployment. Labor market equilibrium and unemployment structural & cyclical. Natural rate of unemployment.
Credit markets, interest rates and supply and demand curves for credit and equilibrium. Banks & financial intermediation. Functions of banks.
Monetary system: money, types and money supply. Quantity theory of money. Inflation: causes, consequences, social costs and benefits. Central bank functions and objectives of monetary policy. Bank reserves and demand, supply of federal funds.

Unit IV: Fluctuations and Policy Interventions **[15 hours]**

Economic fluctuations and business cycles. Sources of fluctuations, multipliers, equilibrium in the short and the medium run.
Countercyclical monetary policy: controlling repo rate and other tools. Countercyclical fiscal policy: expenditure based, taxation based and others.

Essential Readings:-

Macroeconomics, Daron Acemoglu, David Laibson, John List, Peerson 2023.

Additional Readings

Core Econ Team, The Economy 1.0 and The Economy 2.0, www.core-econ.org
Case, K.E., Fair, R.C., Sharon O., Principles of Economics, Pearson

END OF CORE PAPER

DISCIPLINE SPECIFIC ELECTIVE COURSE 1 (DSE-1): INCOME TAX LAW AND PRACTICE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Income Tax Law and Practice (DSE 1)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at

- Introducing basic definitions in Income Tax Act
- Computing taxable income under the heads Salaries and House Property
- Calculate Profits and Gains of Business or Profession, Capital Gains and Income from other sources
- Understand deductions from gross taxable income and filling of returns.

Learning outcomes

By studying this course, the students will be able to:

- To Understand the Process of determination of taxable income
- To apply the deductions to taxable income as per the latest provisions of Income-tax Act, 1961
- To Acquire the skill of Filling Basic Returns of Income Tax

SYLLABUS OF DSE-1

Unit 1: Introductory Concepts (3 hours)

Permanent Account Number (PAN), Assessment Year, Previous Year, Person, Assessee, Gross Total Income, Total income and its computation, Tax Rates, Residential status; Relationship between Residential Status and Incidence of Tax. Incomes Exempted under section 10.

Unit 2: Computation for "Salaries" and "Income from House Property" (15 hours)

Income under the head "Salaries": Meaning of Salary, basis of charge, Allowances, Perquisites, permissible deductions from salary income, Deduction under Section 80 C.

Income under the head "Income from House Property": Basis of charge, income from let out house property, income from self-occupied property.

Unit 3: Computation for 'Profits and Gains of Business or Profession', 'Capital Gains' and 'Income from other sources' (15 hours)

Profits and gains of business or profession: Basis of charge, important rules regarding assessment of PGBP, computation of Profits from Business or Profession, deductions expressly allowed, expenses expressly disallowed.

Capital gains: basis of charge, meaning of capital asset, cost of acquisition, improvement and indexation, exemptions for capital gains arising from transfer of Capital Assets, calculation of tax on short-term and long-term capital gains.

Income from other sources: basis of charge, dividend, winnings from lotteries, crossword puzzles, etc., interest on securities, advance money received for transfer of a capital asset, permissible deductions.

Unit 4: Computation of Total Income and Tax Liability (12 hours)

Computation of total income; Deductions from gross total income under section 80 C to 80 U; Rebates and reliefs; Set-off and carry forward of losses (Concept only), Concept of advance payment of Tax and Deduction of Tax at Source. Computation of Taxable Income and liability of Tax. e-Filing of Returns: ITR-1 (SAHAJ) and ITR-2

Essential/recommended readings

1. Ahuja, G. and Gupta, R. Simplified Approach to Income Tax. Flair Publications (P) Ltd.
2. Singhania, V.K. and Singhania, M. Students Guide to Income Tax. Taxmann Publications (P) Ltd.

Software to be used for teaching are:

1. 'Excel Utility' available at incometaxindiaefiling.gov.in
2. Vinod Kumar Singhania, e-filing of Income Tax Returns and Computation of Tax Taxmann Publication (P) Ltd, New Delhi. (Latest version)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 2 (DSE-2): PUBLIC FINANCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Public Finance (DSE2)	4	3	1	0	Class 12	None

Learning Objectives

The course aims to develop an understanding of

- Fundamental concepts of Public Finance.
- Economics of government expenditure and taxation
- Efficiency and equity aspect of taxation of centre and state government.
- Different types of canons in taxation.

Learning outcomes

By studying this course, the students will be able to:

- Apply tools of basic microeconomics to key policy issues relating to the spending, taxing and financing activities of the Government.
- Understand difference in impact of direct and indirect taxation.
- Understand the recent developments and issues in Indian Public Finance.

SYLLABUS OF DSE-2

Unit 1: Theory of Public Finance (12 hours)

Public finance: Meaning, nature, scope and importance, difference between private and public finance. Principle of maximum social advantage.Role of state in public finance. Elementary theory of product and factor taxation.
Sources of revenue: taxes, loans, grants and aid – meaning and types, Principle of public expenditure. Public finance and the economic system.

Unit 2: Current Issues in Indian Tax System (12hours)

Direct and Indirect Tax Reform in India, Different forms of direct tax in India,
Changing regime of taxation-direct to indirect taxation.
Introduction of GST and its implication for state finances and fiscal federalism in India,
Latest finance commission and its recommendation for fiscal devolution.

Unit 3: Center State Financial Relations (9hours)

Center state fiscal relations, horizontal and vertical tax devolution in India,

State and local finance in India.
Performance and Equity debate in fiscal devolution in India.
Report of finance commission in post liberalisation period.

Unit 4: Principles of Taxation (12 hours)

Canons of taxation, Meaning of Canons of Taxation -Types of Canons of Taxation-Canon of equality or equity, Canon of certainty, Canon of economy, Canon of productivity, Canon of Diversity, Canon of convenience, Canon of elasticity, Canon of simplicity, Canon of diversity, Characteristics of Canons of Taxation.

Essential/recommended readings

1Musgrave, R. A. and Musgrave, P.B., Public Finance in Theory and Practice (1989), 5th edition. McGraw Hill Education.

2. Bagchi, Amaresh. Reading in Public Finance, Oxford University Press.
3. Bhatia H.L.. Public Finance. Vikas Publishing House;
4. Shankar Acharya, Thirty years of Tax Reforms in India, EPW, May 2005
5. Rao, M. Govinda, "Central transfers to states in India: rewarding performance while ensuring equity." Final report submitted to NITI Aayog (2017) (pages 1 to 18).
6. Government of India, Fifteenth Finance Commission Report 2021-26, Chapter 6

Suggestive readings

1. Report of Finance commission of India, Various years.
2. Economic Survey, GoI, Various year
3. State Finances: - A Study of Budget, RBI, Latest report

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 2 (DSE-3): ENTREPRENEURSHIP

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Entrepreneurship (DSE 3)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at:

- To introduce the concept of entrepreneurship and its role in the economy
- To launch an Entrepreneurial Venture and writing a business plan
- To identify and explore legal and financial requirements of a business
- To understand the role and creativity in sustainable Business

Learning outcomes

By studying this course, the students will be able to:

- To develop critical thinking, problem solving skills and entrepreneurial mind-set in students.
- To enhance the understanding of the entrepreneurial process from idea generation, to concept development and creation of the venture.
- To enable the understanding of the business models, legal aspects of enterprise and writing a business plan.
- To apprise students with ways to finance and scale up the business.

SYLLABUS OF DSE-2

Unit 1: Introduction to Entrepreneurship (9 hours)

Concept of Entrepreneurship; Attributes of Entrepreneur; Distinction between entrepreneur and manager; Concept of corporate entrepreneurship/ intrapreneurship; Concept of social entrepreneurship; Role of entrepreneurship for an economy; Understanding business model strategy; Legal forms of enterprise; case study discussion on entrepreneurs, intrapreneurs, business models

Unit 2: Launching Entrepreneurial Venture (12 hours)

Identification of opportunities and Idea generation and screening methods- Brainstorming, mind-mapping, story-telling, SCAMPER, attribute listing, focus group

interviews, customer feedback; Feasibility studies- Marketing, Financial, Technical, Socio-economic Feasibility; Writing Business Plan

Unit 3: Legal and Financial Aspects (12 hours)

Legal requirements of business (Basic concept and relevance of patents, copyrights, and trademark); Financing- Start-up phase financing, growth stage financing, Maturity-phase financing; angel investment and venture capital, other forms of external financing; case study discussion on financing a venture

Unit 4: Sustaining and Scaling Up (12 hours)

Keeping the entrepreneurial spirit alive- Challenges and remedies, Role of creativity and innovation, Barriers to entrepreneurship, Concept of sustainability, Ethical Perspectives; Introducing Shared Innovation into the Business Model; Evolution of CSR from Compliance to Sustainable Entrepreneurship; How to Design CSR Strategies that Optimize Impact for Business and Society

Essential/recommended readings

·1. Harvard Business Review Entrepreneur's Handbook: Everything You Need to Launch and Grow Your New Business

2. Hisrich, R. D. International entrepreneurship: starting, developing, and managing a global venture. Sage Publications.

3. Sharma, S., Starik, M., & Wuebker, R. Sustainability, innovation and entrepreneurship: introduction to the volume.

Additional References:

1. Blank, S., Andreessen, M., Hoffman, R., & Sahlman, W. A. (2018). HBR's 10 Must Reads on Entrepreneurship and Startups (featuring Bonus Article “Why the Lean Startup Changes Everything” by Steve Blank). Harvard Business Press.

2. Drucker, P. (2014). Innovation and entrepreneurship. Routledge.

3. Hisrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A.: Entrepreneurship, Tata McGraw Hill.

4. Kuratko, D.F., and Rao, T. V., Entrepreneurship: A South-Asian Perspective, Cengage.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 4 (DSE-4): ADVERTISING MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Advertising Management (DSE 4)	4	3	1	0	Class 12	None

Learning Objectives

To provide students with an understanding of:

- Fundamentals of advertising.
- Planning advertisements to target audience needs using product benefits and product characteristics.
- Crafting an effective creative brief to direct the approach to an advertising campaign.
- Various types of advertising media.

Learning outcomes

By studying this course, the students will be able to:

· Understand the role played by advertising agencies.

· Recognise and identify the facet model objectives in any advertisement.

· Conduct situation analysis and consumer insight mining.

· Learn creative execution strategies including application of appeals, layouts and creative copywriting.

· Understand and conduct appropriate media mix selection.

SYLLABUS OF DSE-4

Unit 1: Foundations of Advertising **(12 hours)**

Concept of advertising, Types of advertising, Concept of IMC, Role and functions of Advertising, the key players, functions of advertising agencies, Organisation of agency, Advertising appropriateness- factors influencing advertising budgets, methods of setting advertising budgets.

Unit 2: Planning and Strategy **(12hours)**

Planning Framework-marketing and advertising plan, Facet model of objectives (Perception, Cognition, Affect, Association, Action), DAGMAR, Marketing strategy and situation analysis, consumer insight mining, big idea, positioning for advertising campaigns.

Unit 3: Effective Advertising Execution **(12hours)**

The creative and message strategy, creative brief, themes and appeals, execution styles, message format, message tone, copywriting creativity, body copy, visual layouts, evaluation of effectiveness, pre-testing, post-testing.

Unit 4: Effective Advertising Media (9hours)

Types of media, newer media options, media objectives, developing a media plan, media Plan budget, media mix selection.

Essential/recommended readings

1. Belch,G.E., Michael, A., Keyoor, Purani. Advertising and Promotion-An Integrated Maketing Communications. 12th edition. Tata McGraw Hill Education. 2021.
2. William Wells, Sandra Moriarty, and John Burnett. Advertising: Principles and Practice. Prenctice Hall of India. 2007.
3. Jethwaney, Jaishri., Jain, Shruti. Advertising Management. Oxford University press.
4. Shah, Kruti. Advertising and Integrated Marketing Communications. McGraw Hill Education India. 2014.
5. Aaker, David A., Batra, Rajeev., Myers, John G. Advertising Management. Pearson Education. 2006.
6. Shimp, T.A. .Advertising and Promotion: An IMC Approach. Cengage. 2013.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 5 (DSE-5):
Investment and Portfolio Optimization

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Investment and Portfolio Optimization (DSE 5)	4	3	1	0	Class 12	None

Learning Objectives

This course aims at:

- Provides a broad overview of investment and risk associated with it
- Measurement and analysis of return and risk of an equity on the basis of fundamental and technical analysis
- Understand bond fundamentals and interest rate theories
- Construction, analysis and evaluation of a portfolio of securities.

Learning outcomes

By studying this course, the students will be able to:

· Provide a theoretical and practical background of investments valuation

· Do valuation of equity and debt instruments

· Analyse and manage the bond as well as equity portfolios in the real word.

· Understand how to measure the portfolio performances

SYLLABUS OF DSE-5

Unit 1: Basics of Investment (6 hours)

Investment alternatives and objectives, investment, gambling, speculation, introduction to risk – return trade off: types of risks, sources of risks, measures, analysis, determinants of required rates of return and relationship between risk and return. Types of returns: Holding Period Return (HPR) & Compound Annual Growth Rate (CAGR). Attributes of a good investment. Types of assets: Real Assets versus Financial Assets. Investment Process.

Unit 2: Analysis of Equity (12hours)

Measurement of return and risk of equity shares. Approaches to equity analysis, Fundamental Analysis- Economy, Industry, Company Analysis (EIC framework); Equity Valuation Models (DDM, P/E Ratio model and Free Cash Flow Valuation approach). Valuation based on other ratios-P/B ratio, Price to Sales ratio and Price to Cash flow ratio. Technical Analysis – Concept, market indicators and specific stock indicators.

Random Walk Theory & Efficient Market Hypothesis (EMH): Forms, empirical evidence and tests.

Unit 3: Analysis of Bonds (12hours)

Bond fundamentals, types of bonds & risks in bonds. Valuation of bonds. Bond yields-current yield and Yield-to-maturity (YTM). Bond price-yield relationship, analysis of risks in bonds-duration and modified duration. Theories of term structure-Expectations theory, Segmented markets theory and Liquidity Preference theory. Yield curve.

Unit 4: Portfolio Construction, Management and Evaluation (15hours)

Modern Portfolio theory: Diversification & portfolio risk, Harry Markowitz model, measurement of portfolio risk and return, measurement of co-movements in security returns, calculation of portfolio risk, efficient frontier and optimal risky portfolio. Riskless lending & borrowing and capital market line.
Capital Asset Pricing Model: Development of the CAPM, assumptions, beta and security market line. Sharpe's Single Index Model. Portfolio performance evaluation- Sharpe's index, Treynor's Index, Jensen's alpha, and Information ratio.
Note: Some case studies related to above topics are required to be discussed.

Essential/recommended readings

1. Bodie, Zvi., Kane Alex and Alan J. Marcus. Investments. McGraw Hill.
2. Chandra, P. Security Analysis and Portfolio Management. Tata McGraw Hill.
3. Francis. J.C. & Taylor, R.W. Theory and Problems of Investments. Schaum's Outline Series. TMH. New Delhi,
4. Fischer, Donald E. and Ronald J. Jordan. Security Analysis and Portfolio Management. PHI Learning.
5. Pandian, Punithavathy. Security Analysis and Portfolio Management. 2nd Edition. Vikas Publishing House. New Delhi
6. Reilly, Frank K, and Brown, Keith C. Investment Analysis and Portfolio Management. Cengage Learning.
7. Rustagi, R.P. Investment Management. Sultan Chand & Sons.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 4 (DSE-4): INTERNATIONAL FINANCIAL MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
International Financial Management (DSE 6)	4	3	1	0	Class XII	None

Learning Objectives

This course aims at inculcating an understanding of:

- Key features of international finance and foreign exchange markets.
- Theories of International finance that link exchange rates with interest rates and inflation rates in different countries.
- Evolution of exchange rate system in the international financial markets.
- Determination of exchange rate, types of foreign exchange risks and risk management strategies.

Learning outcomes

By studying this course, the students will be able to:

- Gain substantive knowledge of International Financial Management.
- Understand the principles of trading in foreign exchange markets, different instruments traded, risks involved and how to carry out hedging of currency risks.
- Learn how to compute forward rates using cross rates, computation of synthetic quotes and apply rules to determine existence of arbitrage amongst currencies traded.
- Understand how the international markets have evolved and the alternate exchange rate systems world has seen over the years

SYLLABUS OF DSE-6

Unit 1: Introduction To Currency Markets (12 hours)

Spot &Forex market: Introduction and Features, Participants, & their method of communication in forex markets, SWIFT and CHIPS. Currency Quotes and types, Calculation of forward rates using spot rates, Discount/Premium on spot rate, Swap Points and Outright Forward Rates, Forward Rate vs. Expected Future spot rates, Spot rate with and without transaction costs, Payoff Profiles on Forward Exchange, Currency futures and

Pay of Profiles, Mark to Market, Cross Rates & Synthetic quotes. Arbitrage: one point, two point and three point (triangular) arbitrage.

Unit 2: Parity Conditions in Currency Markets (12 hours)
Purchasing Power Parity (both absolute and relative versions), Interest Rate Parity (explanation of borrowing and lending criteria, diagrammatic presentation) , covered interest rate parity, International Fischer Effect. The linkages between parity conditions.

Unit 3: Alternate Exchange Rate Systems and Payment Terms (9 hours)

Gold Standard and Gold Exchange Standard System with price adjustment mechanism , EMS and its price adjustment, Hybrid systems , Fixed vs Flexible System, Overview on Brettonwoods System, IMF, SDR, Triffon Paradox & Smithsonian Agreement. Payment Terms and Methods of Financing International Trade (Letter of Credit, Forfaiting, Factoring, Credit Lines)

Unit 4: Exchange Rate Determination and Exposures (12 hours)

Currency Demand and Supply Curves, Stability of exchange rates and 'J' Curve Effect, Factors Affecting Exchange Rate, Foreign Exchange Exposure: Nature, Definition, Exposure Line and Interpretating Exposure, Statistical Measurement of Exposure, Types of Exposure (Meaning): Transaction, Economic and Translation Exposure, Hedging Strategies to Manage Transaction Exposures. Currency Swaps.

Essential/recommended readings

1. Apte, P G., Multinational Financial Management.Tata-McGraw Hill. New Delhi.
2. Levi, Maurice. International Finance. McGraw Hill Inc. New York.
3. Madura, Jeff. International Financial Management.South Western Cengage Learning.
4. Seth, A.K., International Financial Management. Galgotia Publishing Company. New Delhi.
5. Shapiro, Allen C., Multinational Financial Management. Prentice Hall India Pvt Ltd. New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 7 (DSE-7): Monetary Economics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Monetary Economics (DSE 7)	4	3	1	0	Class 12	None

Learning Objectives

This course provides the student the knowledge of:
1. Forms of money and its measures and associated theories
2. Money and capital markets, Financial products, institutions and crises
3. Interest rates, their determination and associated theories
4. Structure and role of the banking system and its reforms
5. Monetary theory, monetary policy, its goals and current practice in India

Learning outcomes

By studying this course, the students will be able to:

- Develop a critical understanding of functioning of financial institutions, markets and instruments and how growth of the real economy is interspersed with financial innovation and crisis.
- Learn an important learning outcome relates to aspects with regard to banks and capital markets as they constitute significant components of a financial system.
- Develop an understanding of theory of monetary policy and how it is conducted in India by Reserve Bank of India.
- Develop some basic understanding of few current issues including demonetization, cryptocurrency and problems faced by the banking sector in their appropriate contexts.

SYLLABUS OF DSE-7

Unit 1: **(8 hours)**

Concept, functions and measurement, and Theories of Money Supply Determination, Demonetization and Cryptocurrency.

Unit 2: **(15 hours)**

Financial Institutions, Markets. Instruments and Financial innovation.
Role of Financial Markets and Institutions; problems of asymmetric information, adverse selection and moral hazard, financial crisis. Money and Capital Markets, Organization, Structure and Reforms in India: Role of Financial Derivatives and other Innovations.

Unit 3: **(8 hours)**
Interest rates Determination, Sources of interest rate differentials, Theories of Term Structure of Interest rates, Interest rates in India.

Unit 4: **(8 hours)**
Banking System, Balance Sheet and Portfolio Management, Indian Banking System, Changing role and Structure, Banking Sector Reforms.

Unit 5: **(6 hours)**
Central Banking and Monetary Policy, Functions, Balance Sheet, Goals, Targets (operating, intermediate and final), Indicators and instruments of monetary control, Tinbergen's theorem, Inflation targeting, monetary management, current monetary policy in India**.**

Essential/recommended readings

1. Fabozzi F Jet al(2009): Foundations of Financial Markets and Institutions, Pearson
2. MishkinF S , Eakins S G,Jayakumar T , Pattnaik R K (2017): Financial Markets and Institutions, Pearson.
3. Dua, P(2020), "Monetary Policy Framework in India", Indian Economic Review, Vol. 55, Issue 1, June 2020
4. Jadhav,Narender: Monetary Policy,Financial stability and Central Banking in India Macmillan,New Delhi,India
5. Kaul,Vivek(2020) Bad money: inside the NPA Mess and how does it threaten the Indian Banking System, Harper Collin Publisher India
6. Ghate, C., & Kletzer, K. M. (Eds.). (2016). Monetary policy in India: A modern macroeconomic perspective. Springer
7. Chibber, Ajay, Salman, Soz, Anees(2021) India's Financial Sector: A Whodunnit
8. EDs in Unshackling India. Haper Collins Publishers India.
9. Report of the Working Group: Money Supply Analytics and Methodology of Compilation, 1998 Annual Report; Master Circular - Prudential Norms on Capital Adequacy - Basel I Framework – 2011; RBI Bulletin; Report of Currency and Finance (latest).
10. Various publications of RBI and other agencies / institutions
11. Raghuram_Rajan_Committee_on_Financial_Sector_Reforms

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 8 (DSE-8): BEHAVIOURAL ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Behavioural Economics (DSE 8)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course attempts to impart an understanding of:
(i) the evolution and growing importance of behavioural economics
(ii) the question of choices when outcomes are known
(iii) formulation of choice under conditions of uncertainty
(iv) the theory of games and Nash equilibria under select circumstances

Learning outcomes

By studying this course, the students will be able to:

- To understand the departures from traditional theory by first explaining the decision-making process in a theoretical framework and then using empirical and experimental findings.
- To build a better understanding of consumer choices and behaviours to enhance his/her decision-making and he/she will be able to differentiate between economic and psychological approaches to human decisions. Understands how behavioural economies incorporates psychological factors such as altruism, fairness trust into standard theories to analyse human choices and also have the knowledge of predictive power of economic theories.
- To understand the main normative and descriptive approaches to know principles of decision making under risks
- To apply behavioural theory to interpretation of real decisions and public policy.

SYLLABUS OF DSE-8

Unit 1: Introduction **(9 hours)**

Introduction to behavioural economics: history, evolution, objective, scope, methods and concepts in behavioural economics.

Unit 2: Choice under certainty **(12 hours)**

Preferences, rationality, utility, menu dependence, decoy effect, endowment effect, heuristics and biases.

Unit 3: Choice under uncertainty **(12 hours)**

Probability, Bayes' Rule, Expected value, Confirmation Bias, Expected Utility, Bundling, Allais Problem.

Unit 4: Strategic Actions **(12 hours)**

Game Theory, Nash Equilibrium, Altruism, Fairness, Justice, Trust, Welfare Economics, Nudge Agenda and behavioural finance.

Essential/recommended readings

1. Angner, Erik (2016), A course in behavioral economics, (Second edition,), Palgrave, London
2. Colin F. Camerer, George Lowenstein & Matthew Rabin (Ed.) (2004), Advances in Behavioral Economics, Princeton University Press.
3. Wilkinson, Nick and Matthias, Klaes (2012), An introduction to Behavioral Economics, 2nd edition, Palgrave Macmillan.
4. Abdukadirov, Sherzod (ed.). Nudge Theory in Action: Behavioral Design in Policy and Markets

Suggestive readings

1. Andrikopoulos, Panagiotis. Modern Finance vs. Behavioural Finance: An Overview of Key Concepts and Major Arguments (June 2005). http://dx.doi.org/10.2139/ssrn.746204
2. Andreoni, James, Justin M. Rao, and Hannah Trachtman. "Avoiding the ask: A field experiment on altruism, empathy, and charitable giving." Journal of political Economy 125, no. 3 (2017): 625-653
3. Fama, Eugene F. "Market efficiency, long-term returns, and behavioral finance." Journal of financial economics 49, no. 3 (1998): 283-306.
4. Falk, Armin, and Christian Zehnder. "A city-wide experiment on trust discrimination." Journal of Public Economics 100 (2013): 15-27.
5. Kahneman, Daniel, Jack L. Knetsch, and Richard H. Thaler. "Experimental tests of the endowment effect and the Coase theorem." Journal of political Economy 98, no. 6 (1990): 1325-1348.
6. Samson, Alain. "An introduction to behavioral economics." The behavioral economics guide (2014): 1-12.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 9 (DSE-9): International Economics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
International Economics (DSE 9)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at:

- To explain ancient view of International trade and production and consumption gains from trade
- To analyse the working of H-O theory and new trade theory
- To understand the international trade policies and its impact on trade
- To Understand the functioning of WTO and its implications for India.

Learning outcomes

By studying this course, the students will be able to:

- Understand basic theories of International Trade and the terms used therein.
- Understand trade policies and instruments used to control international trade.
- Understand what is WTO and how does it affect international trade?
- Understand various concepts related to Regionalism and Integration and their importance.

SYLLABUS OF DSE-9

Unit 1: International Trade Theories (12 hours)

International trade as an Engine of Growth, Ancient view of International Trade, Theory of Mercantilism, Absolute Advantage theory, Comparative Advantage Theory, Opportunity cost theory of trade, Autarky Equilibrium, Production and Consumption Gains from Trade.

Unit 2: Modern Theories of Trade (12 hours)

Introduction, H-O theory- Assumptions, General Equilibrium framework, the working of H-O theory, Factor price equilibrium theorem, Income Distribution effects of H-O theory, Empirical implications of H-O theory, Leontief Paradox, Factor Intensity Reversal, New trade theories (Difference in technology, Economies of Scale and Monopolistic Competition and Trade)

Unit 3: International Trade Policies and Practices (12 hours)

Trade Policy Instruments, Tariffs Barriers, Import Tariff- It's effect and measurement, Non-Tariff Barriers- Import Quotas, Voluntary Export Restraints, Anti-Dumping, Economic Integrations, Regional groups – EU, NAFTA and SAARC/ ASEAN, Theory of Customs Union - Impact of customs union on trade- trade creation and diversion. Import Substitution and Export Promotion.

Unit 4: WTO and Trade (9 hours)

What is WTO, Objectives, Principles, Areas of Function of WTO, Role of WTO in trade, Foreign Trade Policy of India, The Sanitary and Phyto SanitaryAgreement (SPS) of WTO and Its Implications for India, India & World Trade Organization (WTO): WTO Agreement on Agriculture.

Essential/recommended readings

1. Salvatore, D. (Edition 2008) , International Economics, Pearson Education : New Delhi
2. Krugman Paul R. & Obstfeld M. (2013) : International Economics:- Theory and Policy (IXth Edition), Pearson Education , New Delhi.
3. Cherunilam Francis (1998) :International Economics (Vth Edition), McGraw Hill Education (India) Pvt Ltd.
4. WTO and its implications on Indian Agriculture, National Institute of Agricultural Extension Management (MANAGE), Hyderabad.

Additional References:

1. Appleyard Dennis R.; Cobb Steven; Field Alfred J. (2010). International Economics (Vth Edition), McGraw Hill Education (India) Pvt Ltd.
2. Thompson, Henry(2010): International Economics – Global markets and competition 2nd Edition Singapore; Hachensack, N.J: World Scientific.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 10 (DSE-10): INDIAN ECONOMY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Indian Economy (DSE 10)	4	3	1	0	Class 12	None

Learning Objectives

The course is aimed at developing an understanding of:
(i) the different policy regimes in India since Independence: growth and development
(ii) Demographic trends, human development and state policies
(iii) Fiscal and monetary policies and laws related to labour
(iv) Sectoral growth and changes: agriculture, manufacturing and services

Learning outcomes

By studying this course, the students will be able to:

- Understand major issues and challenges facing the Indian Economy.
- Gain skills to analyze key economic issues and policy documents.
- Relate theoretical frameworks of macroeconomics and microeconomics to the Indian context.

SYLLABUS OF DSE-10

Unit 1: Economic Development since Independence (12 hours)

Major Features of the economy at independence; growth and development under different policy regimes—goals, constraints, institutions and policy framework; an assessment of performance—sustainability and regional contrasts; structural change, savings and investment.

Unit 2: Demographic Trends and policies (12hours)
Population and Human Development Demographic trends and issues; education; health and malnutrition. Policies in poverty; inequality and unemployment.

Unit 3: Macroeconomic Policies and Their Impact (9 hours)

Fiscal Policy; trade and investment policy; financial and monetary policies; labour laws.

Unit 4: Sectoral Growth & Development (12 hours)

Agriculture Growth; productivity; agrarian structure and technology; capital formation; trade; pricing and procurements. Industry: Growth; productivity; diversification; small scale industries; public sector; competition policy; foreign investment. Trends and issues in Service Sector.

Essential/recommended readings

1. Drèze, J., &Sen, A. (2013). An Uncertain Glory.Princeton University Press.

2. Balakrishnan, P. (2007). The Recovery of India: Economic Growth in the Nehru Era. Economic and Political Weekly, 42(45/46), 52–66.

3. Mohan, R. (2008). Growth Record of the Indian Economy, 1950-2008: A Story of Sustained Savings and Investment. Economic and Political Weekly, 43(19), 61–71.

4. Vaidyanathan, A., & Krishna, K. L. (2007). Institutions and markets in India's development. Oxford University Press.

5. T. Dyson, 2008, India 's Demographic Transition and its Consequences for Development in Uma Kapila, Indian Economy Since Independence, 19th edition, Academic Foundation.

6. Shankar Acharya, 2010, Macroeconomic Performance and Policies 2000-08, in Shankar Acharya and Rakesh Mohan, editors, India's Economy: Performances and Challenges: Development and Participation, Oxford University Press.

7. Rakesh Mohan, 2010, India 's Financial Sector and Monetary Policy Reforms, in Shankar Acharya and Rakesh Mohan, editors, India's Economy: Performances and Challenges: Development and Participation, Oxford University Press.

8. PulapreBalakrishnan, Ramesh Golait and Pankaj Kumar, 2008, Agricultural Growth in India Since 1991, RBI DEAP Study no. 27.

9. B.N. Goldar and S.C. Aggarwal, 2005, Trade Liberalisation and Price-Cost Margin in Indian Industries, The Developing Economics, September.

10. P. Goldberg, A. Khandelwal, N. Pavcnik and P. Topalova, 2009, Trade Liberalisation and New Imported Inputs, American Economic Review, Papers and Proceedings, May.

11. KunalSen, 2010, Trade, Foreign Direct Investment and Industrial Transformation in India, ïnPremachandraAthukorala, editor, The Rise of Asia, Routledge.

12. A. Ahsan, C. Pages and T. Roy, 2008, —Legislation, Enforcement and Adjudication in Indian Labour Markets: Origins, Consequences and the Way Forward, in D. Mazumdar and S. Sarkar, editors, Globalization, Labour Markets and Inequality in India, Routledge.

13. DipakMazumdar and SandeepSarkar, 2009, —The Employment Problem in India and the Phenomenon of the Missing Middle, Indian Journal of Labour Economics.

14. J. Dennis Rajakumar, 2011, Size and Growth of Private Corporate Sector in Indian Manufacturing, Economic and Political Weekly, April.

15. Ramesh Chand, 2010, Understanding the Nature and Causes of Food Inflation.Economic and Political Weekly, February.

16. BishwanathGoldar, 2011, Organised Manufacturing Employment: Continuing the Debate. Economic and Political Weekly, April.

17. Basu, K., &Maertens, A. (2012). The new Oxford companion to economics in India.New Delhi Oxford University Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 11 (DSE-11): Understanding Consumers

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Understanding Consumers (DSE 11)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at:

- To understand psyche of a consumer and his personality traits
- To apply theories to learn and predict consumer behaviour
- To learn culture role and dynamics of Family and Consumer socialization
- To analyse consumer decision making process and diffusion of innovation

Learning outcomes

By studying this course, the students will be able to:

- Understand personality theories and their applications to consumer psychology.
- Analyse consumer perception in advertising through psychology based theories of perception.
- Understand behavioural learning theories and consumer attitude formation in the context of advertisements.
- Understand the role of opinion leaders, family and culture in consumer decisions.
- Identify the use of consumer behaviour concepts in prevalent advertisements.

SYLLABUS OF DSE-11

Unit 1: Personality, Perception and Positioning (12 hours)

Freudian Theory, Neo-Freudian theory of personality; Personality traits; Anthropomorphism; Self-Perception; Sensory information, Absolute and differential thresholds; Perceptual Selection, Perceptual Organisation, Interpretation of cues and imagery, Risk perception; Positioning and Repositioning (including use of perceptual mapping).

Unit 2. Consumer Learning and Attitude (12hours)

Elements, Behavioural learning theories (Classical, Instrumental, Observational); Information processing; Cognitive learning theory, Consumer involvement and hemispheric lateralisation; Recognition and recall measures. Consumer attitude formation; Tri-

component attitude model; Attitudes motivational functions; Elaboration Likelihood Model; Cognitive dissonance and conflict resolution; Causality and attribution theory.

Unit 3. Persuasion, Social Setting and Culture (9hours)

Broadcasted versus Addressable messages, message structure, persuasive appeals; Credibility and persuasive power of reference groups, Opinion leaders (influencers), Word-of-mouth strategic applications
Family and consumer Socialization; family decision making and members' roles; Culture's role and dynamics; Learning Cultural Values; Measuring values; Core values.

Unit 4. Consumer Decision-Making and Diffusion of Innovations (12 hours)

Consumer decision making: need recognition, decision spectrum, pre-purchase search, evaluation, decision rules, rules and marketing strategy, incomplete information, post-purchase evaluation- brand loyalty, disconfirmation of expectations; Consumer gifting behaviour; Diffusion, Types of innovation, Features affecting adoption, Adoption process.

Essential/recommended readings

1. Schiffman, Leon G., Kanuk, Leslie Lazar.,Kumar, S. Ramesh. Consumer Behaviour. 12th ed. Pearson Publications.

Additional References:

1. Hawkins, Roger J., Best, Kenneth A., Coney. Consumer Behaviour: Building Marketing Startegy. Tata McgrawHill.
2. Solomon, Michael. Consumer Behaviour: Buying, Having and Being. 12th ed. Pearson Publications.
3. Nair, Suja. Consumer Behaviour in Indian Perspective. Himalaya Publications.
4. Kumar, S Ramesh. Conceptual Issues in Consumer Behaviour. Pearson Publication.
5. Sheth, Jagdish N., Mittal, Banwari. Customer Behaviour: A Managerial Perspective. Thomson Publication.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 12 (DSE-12): RESEARCH METHODOLOGY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Research Methodology (DSE 12)	**4**	**3**	**0**	**1**	**Class 12**	**None**

Learning Objectives

The course provide an understanding of the methods of conducting research through:
(i) introducing students to basic concepts of quantitative and qualitative research methods.
(ii) scientific methods of collecting reliable data and appreciating primary and secondary data
(iii) parametric and non parametric tests and interpretation of the results
(iv) publishing of research and issues of ethics in data collection and use.

Learning outcomes

By studying this course, the students will be able to:

- Assess the roles of the researcher and the informant in the research process and be in a position to apply qualitative and quantitative research methodology.
- Perform literature reviews using print and online databases
- Learn about the various formats for citations of materials
- Describe sampling methods, measurement scales and instruments, and their appropriate uses
- Learn the rationale for research ethics
- Provide understanding of appropriate statistical techniques for summarizing and displaying business and economic data.
- Perform the basic qualitative and quantitative data analysis in a clear concise and understandable manner with an in-depth, faster and accurate univariate, bivariate and multivariate data analysis.

SYLLABUS OF DSE-12

Unit 1: Elements of Research (15 hours)

Research- Definition, characteristics, Objectives. Types of Research- Quantitative Vs Qualitative; Descriptive, Exploratory and Causal. Research Methodology- Research Process, Formulating the Research Problem, Research Questions. Hypothesis-Formulation of Hypothesis, Role of Hypothesis, tests of Hypothesis and Errors in hypothesis testing. Research Design - importance and types, features for a good research design. Concept of Population and Sample, Sampling Design- Probability and non-probability Sampling techniques, Sample Size and sampling Error.

Unit 2: Understanding Data and its Collection (15 hours)

Data types - Nominal, Ordinal, Interval and Scale
Primary and Secondary Data- advantages and disadvantages. Primary Data Collection: Observation method, Interview method, Questionnaires-prerequisites and designing, Case Study method Scales-Understanding, Construction and Application (Graphic Rating, Likert scale, paired comparison, ranking, constant sum, semantic differential scale). Secondary sources of data- previous empirical studies, NSSO, CSO, RBI, World Bank.

Unit 3: Processing and Analysis of Data (10 hours)

Data recording, conducting univariate and bi-variate analysis-using-descriptives, Cross-tabs-chi-square tests of independence, goodness of fit, One Sample t-test, Independent Sample t-test, Paired Sample t-test, (Assumptions Testing and Inferential Analysis ANOVA, Repeated measure ANOVA, MANOVA.
PCA, Cluster analysis, Factor Analysis, Discriminant analysis.

Unit 4: Additional Topics in Research (5 hours)

Review of Literature-techniques, do's and don'ts of conducting literature survey, citation, referencing styles, ethics in research.

Practical Component (30 hours) : Practicals to be based on use of a statistical software to enable to student to implement all the concepts and tools taken up in the theory classes in the course.

Essential/recommended readings

1. Donald R Cooper & Pamela S Schindler, "Business Research Methods", McGraw Hill
2. Business Research Methods – Alan Bryman& Emma Bell, Oxford University Press.
3. Ranjit Kumar, "Research Methodology: A Step-by- Step Guide for Beginners" Sage
4. Joseph F. Hair, Jr. William C. Black, Barry J. Babin, Rolph E. Anderson," Multivariate Data Analysis, Seventh Edition-Pearson's New International Edition

Suggestive readings

1. Amir D Aczel, "Complete Business Statistics", McGraw Hill Education.
2. Naresh K. Malhotra, "Marketing Research: An Applied Orientation" PHI
3. Field, Andy, "Discovering Statistics using IBM SPSS Statistics", 5th Edition, SAGE.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 13 (DSE-13): BEHAVIOURAL FINANCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Behavioural Finance (DSE 13)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at:

- Introducing the core principles of behavioural finance, psychological biases and emotions influencing financial decision-making.
- Identifying common biases (e.g., overconfidence, loss aversion) and their impact on investor behaviour and market outcomes.
- Examining how psychological factors contribute to market anomalies and inefficiencies that traditional finance models can't explain.
- Developing skills to apply behavioural finance concepts in real-world scenarios, including portfolio management, financial advising, and investor behaviour analysis.

Learning outcomes

By studying this course, the students will be able to:

- Recognize and explain key psychological biases and how they influence financial decision-making.
- Develop the ability to analyze and interpret market inefficiencies and anomalies using behavioural finance concepts.
- Apply behavioural finance theories to practical financial decisions, such as investment strategies, portfolio management, and retirement planning.
- Assess how emotions and psychological factors impact individual and institutional investor behaviour, and the broader implications for market dynamics.

SYLLABUS OF DSE-13

Unit 1: Introduction to the Practical Applications of Behavioural Finance **(9 hours)**

Meaning of behavioural finance, traditional finance vs. Behavioural finance, evolution of behavioural finance, key themes in behavioural finance, a brief history of behavioural finance and behavioural finance micro vs. Behavioural finance macro.

Success & failure in investing and understanding behavioural trends in markets.

Unit 2. Heuristics, Biases and Decision making (15 hours)

How the human mind works: the two systems, heuristics or rules of thumb, rationale for heuristics, categories of heuristics & their biases, familiarity and related heuristics, representativeness and related heuristics, anchoring and irrationality and adaptation.

Behavioural obstacles to investing.

Self-deception: Forms of overconfidence, causes of overconfidence, factors impeding overconfidence, other forms of self-deception, how much do the experts know, the success equation: untangling skill and luck in business.

Investor Behaviour: Portrait of an individual investor, What the heuristics and biases mean for financial decision-making, Implications of overconfidence for decision-making, Influence of emotions, Implications of mental accounting, Behavioural portfolio theory, Knowing yourself: Psychographic models, Basic ingredients of a sound investment philosophy, Strategies for overcoming psychological biases. Case studies

Unit 3: Market Anomalies, Puzzles and Value Investing (12 hours)

Market Outcomes: Size effect and seasonality, Momentum and long-term reversal, post-earnings announcement drift, the value premium, Equity premium puzzle, Excessive volatility, Bubbles and crashes and Behavioural asset pricing model.

Investment styles: Value and Growth investing. Behavioural obstacles to value investing.

Value Central tenets of value investing, Evidence and prospects of value investing, Strategies of some well-known value investors and Academic research on value investing.

Contrarian investing - The psychology of going against the crowd: Meaning, psychological constraints and conventional versus contrarian portfolio

Unit 4: Market Bubbles, Financial Crisis & Lessons (9 hours)

Growth trap: Introduction, behavioural anomalies behind investors chasing, fads and fancies, starting of the Indian equity cult, long-term stock returns, examples of growth trap, differentiating between good investment and good business, evidence and lessons for investors.

Bubble trap: Anatomy of financial crisis, how is a bubble formed?, human behavioral anomalies, how does one identify a bubble?, lessons for investors, why do past bubbles not guide us and conclusion.An account of the global financial crisis.

References

Essential

1. Baker, H. K., &Nofsinger, J. R. (2010). Behavioural Finance: Investors, Corporations, and Markets. Hoboken, New Jersey, United States of America: JohnWiley&Sons.(Chapter 1 and 4)

2. Chandra, P. (2016). Behavioural Finance. Delhi, India: McGraw Hill Education (India).(Chapter: 3,4,,9 and Appendix A)

3. Parikh, P. (2009). Value Investing and Behavioural Finance: Insights into Indian Stock Market Realities. Delhi, India: Tata McGraw-Hill.(Chapter 1,2,3,4 and 11)

4. Pompian, M. M. (2006). Behavioural Finance and Wealth Management: How to Build Optimal Portfolios That Account for Investor Biases. Hoboken, New Jersey, United States of America: John Wiley & Sons. (Chapter 1,2 and 24)

Additional

1. Bazerman, M. H., & Moore, D. A. (2002). Judgment in managerial decision making. New Jersey: John Wiley & Sons. (Malkiel, 2003)

2. Malkiel, B. M. (2003). The Efficient Market Hypothesis and Its Critics. Journal of Economic Perspectives , 17 (1), 59-82.

3. Shefrin, H. (2002). Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing. New York: Oxford University Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 14 (DSE-14): FINANCIAL RISK MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Financial Risk Management (DSE 14)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course aims at:

- To understand various types of financial risks (market, credit, liquidity, operational, etc.) faced by business and financial institutions.
- To learn necessary tools to measure, quantify, and assess financial risks using both qualitative and quantitative techniques.
- To develop, design and implement effective risk management strategies, including the use of financial instruments such as derivatives, hedging, and diversification.
- To apply theoretical knowledge to real-world financial risk scenarios, enabling them to make informed decisions in dynamic market environments.

Learning outcomes

By studying this course, the students will be able to:

- Identify different types of financial risks (market, credit, liquidity, operational) and understand their potential impact on businesses and markets.
- Develop proficiency in using various risk measurement tools and models to quantify financial risk exposure.
- Assess and implement strategies for mitigating financial risks, such as diversification, hedging, insurance, and the use of financial derivatives.
- Make informed and well-structured risk management decisions in real-world contexts, applying their knowledge to optimize financial stability and performance.

SYLLABUS OF DSE-14

Unit 1: Risk Incorporation in Projects **(15 hours)**

Inflation adjustment and Adjusted Cost of Capital. Conventional Risk Handling techniques in Capital Budgeting: Sensitivity Analysis, Risk Adjusted Discount Rate, Certainty Equivalent, Simulation. Statistical Techniques to handle risk in Capital Budgeting: Standard Deviation, Coefficient of Variation, Probability Distribution *(Cash Flows are independent, fully dependent and partially dependent on other cash flows)*, Decision Trees.

Unit 2: Risk Management in Derivatives **(12 hours)**

Meaning and Types, Stock Futures, Forwards & Options, Commodity Futures, Weather Derivatives, Hedging/Risk Management through stock futures and payoffs, Stock Options: In the money, At the Money and Out of Money, Payoffs under Stock Options Margin Adjustment for futures., Intrinsic Value, Simple Stock, Futures and Options Combination Strategies (Neutralizing the risk, Spread, Straddle, Collars, Covered call). Interest Rate Swaps.

Unit 3: Risk Management through Pricing of Derivatives (9 hours)

Pricing of Forwards, Option Pricing using Binomial Model and Black Scholes Model, Put Call Parity Equation, Option Greeks: Meaning and Order of Greeks, Delta of European Stock Options, Delta and Black Scholes Model, Delta Hedging. Sensitivity of an Option: Vega, Theta , Rho & Lamda. Hedging through Gamma & Vega, Making a Portfolio Gamma Neutral, Gamma's relation with other Greeks.

Unit 4: Credit Rating and Risk Management in Insurance (9 hours)

Credit Rating: Credit rating in the banking sector, questionnaire method, 'Z' Score, Sensitivity and Transition Probability Matrix, CIBIL. Insurance: Premium Determination for Life: Endowment and Term Policies and Non-Life Policies, Use of Mortality Tables.

References

Essential

1. Hull. J.C & Basu S., Futures Options and Other Derivatives. Pearson Education
2. Vohra, N.D. & Bagri, B.R., Futures and Options, Tata McGraw-Hill.
3. Rustagi, R.P., Investment Management. Sultan Chand & Sons.
4. Financial management, R .P Rustagi, McGraw Hill

Additional

1. Parameswaran, S., Futures and Options. Tata McGraw Hill.
2. Bodie, Zvi., Kane, Alex & Marcus, Alan J., Investments, McGraw Hill.
3. Benninga, Simon, Financial Modelling with Excel, MIT Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 15 (DSE-15): DEVELOPMENT ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Development Economics (DSE 15)	4	3	1	0	Class 12	Knowledge of basics of Economics theory

Learning Objectives

The course aims to help understand the economic, social and institutional factors influencing growth and development. In this light it focusses on:

- Evaluation of development theories
- Addressing issues of poverty and inequality
- Exploring the role of institutions of the state and the market

Learning outcomes

By studying this course, the students will be able to:

- Explore different aspects of growth and development
- Predict and Analyse growth models
- Demonstrate the Interrelationship of poverty, inequality and development are related
- Evaluate role of government and market in economic development

SYLLABUS OF DSE-15

Unit 1: Introduction **(9 hours)**

Meaning of Economic Development, Comparison of Economic Growth and Development, Measurement of Economic Development- Traditional Approach, PCI and Indices based approach, HDI & its components, Core value of development, Sen's Capabilities Approach and Ultimate objective of economic development, quality of life and happiness index

Unit 2:Development Models **(12 hours)**

Balanced vs. Unbalanced growth approach, Economic Development of Labour Surplus Economy, Rural-Urban migration model, Export led growth & open economy growth model

Unit 3: Inequality andPoverty **(12 hours)**

The concept of inequality- various measures of inequality, commonly used inequality measures, gender inequality and economic development, poverty, HPI, poverty traps and vicious circle of

poverty, population growth and economic development, demographic transition theory, cost of education, child labour and externalities, low level of equilibrium trap and critical minimum effort theory

Unit 4: State and Markets **(12 hours)**

The role of state in neo-liberal regime, strategic retreat of state, Structural adjustment Approach of Bretton woods institution, Success and failure of Economic reform and financial crisis in developing countries- experience of 1990s and later financial crisis in Asian and European countries

References:

Essential

1. Ray Debraj, (Latest Edition) Development Economics, Oxford University Press.
2. Jones Charles, (2013) Introduction to Economic Growth, W. W. Nortan& Company.
3. Meier, (2005) Leading Issues in Economic Development, Oxford University Press.
4. Michael. P. Todaro, (2014) Economic Developments, Pearson.
5. Hayami F, (2005) Development Economics, Oxford University Press.
6. Thirwall A.P. (2003) Growth and Development, Palgrave Macmillan.

Additional

1. Acemoglu Daron(2009) Introduction to Modern Economic Growth, Princeton University Press.
2. Cypher James, (2014) The Process of Economic Development 4th Edition, Routledge.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 16 (DSE-16): MARKETING ANALYTICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Marketing Analytics (DSE 16)	**4**	**3**	**0**	**1**	**Class 12**	**None**

Learning Objectives

The course aims to provide an understanding to:

- Market data for informed decision-making.
- Analyse to enhance marketing strategies and performance.
- Assess and improve ROI across marketing efforts.
- Gain proficiency in key marketing analytics tools and methods.

Learning outcomes

By studying this course, the students will be able to:

- Understand the meaning of consumer research and marketing analytics.
- Learn demand analysis and allocation through linear programming as well as analyse advertising effectiveness using causal research.
- Analyse consumer perception using cluster and factor analysis.
- Learn a variety of metrics to enhance customer acquisitions online.
- Conduct analysis of big data for digital analytics in customer journey, touch points and social networks.

SYLLABUS OF DSE-12

Unit 1: Introduction **(12 hours)**

Adoption and application of marketing analytics: AIDA, CRM; Consumer research intelligence: descriptive, exploratory, predictive and prescriptive analytics; Processes followed in typical marketing analytics projects. Advertising Analytics**:** Advertising elasticity of demand, Promotion allocation through linear programming; Advertising effectiveness using causal research, experimental design (Univariate Analysis of Variance) and test markets;

Unit 2: Consumer Perception and Preference **(12 hours)**

Consumer perception analysis using factor and cluster analysis; multi-dimensional scaling for brand perception; Consumer attribute preference using conjoint analysis;

Unit 3: Customer Acquisition Metrics **(12 hours)**

Lead generation metrics, Customer activity metrics, Customer survival analysis-Kaplan Meir Curve and Cox proportional hazards regression, Brand Awareness Recall, Test- drive, Churn, Customer Satisfaction (CSAT), Take Rate, Profit, Net Present Value, Internal Rate of Return, Payback, Cost Per Click (CPC), Transaction Conversion Rate (TCR), Return on Ad Money Spent (ROA), Bounce Rate, WOM (social media reach), Customer Lifetime Value (CLTV).

Unit 4: Digital Analytics: Big Data **(9 hours)**

Web analytics, Customer journey analysis, Customer touchpoint attribution modeling, Dynamic targeting, Integrated big data models, Social listening, Social network analysis.

Practical Component (15 practical sessions; total 30 hours): Practical component of this course equips students with hands-on experience in using data analytics tools to solve real-world marketing problems. Through software-based exercises using SPSS/ Python, students learn to analyze customer data, conduct segmentation, forecast sales, and evaluate campaign effectiveness. Case-based datasets and live dashboards enable learners to apply theoretical concepts in a practical setting. A project on marketing is to be taken up to constitute the end-term practical examination.

References:

Essential

1. Maity, M., Guruzada, P., Marketing Analytics - For Strategic Decision Making. Oxford University Press.
2. Jeffery, Mark. Data-Driven Marketing: The 15 Metrics Everyone in Marketing Should Know. John Wiley & Sons Inc. (Chapter- 4, 5, 6, 7, 8, 9)
3. Verhoef, P., Kooge, E. and Walk, N. (2016). Creating Value with Big Data Analytics- Making Smarter Marketing Decisions. Routledge. New York.

Additional

1. Hemann, C. and Burbary K., Digital Marketing Analytics: Making Sense of Consumer Data in a Digital World. Pearson Education.
2. Venkatesan, R., Farris, P. & Wilcox, R.T. (2018), Cutting Edge Marketing Analytics - Real World Cases and Data Sets for Hands On Learning. Pearson Education Inc.
3. Sorger, Stephan. Marketing Analytics: Strategic Models and Metrics. CreateSpace Independent Publishing Platform.
4. Kotler, Philip., Kartajaya, Hermawan., Setiawan, Iwan. Marketing 4.0: Moving from Traditional to Digital. John Wiley & Sons Inc.
5. Nargundkar, Rajendra., Sainy, Romi. Digital Marketing: Cases from India. Notion Press.
6. Field, Andy. Discovering Statistics using IBM SPSS Statistics. 5th Edition, SAGE Publications.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 17 (DSE-17): BRAND MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Brand Management (DSE 17)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at:

- Understanding the strategic importance of brands for businesses and consumers.
- Developing, positioning, and differentiating brands in competitive markets.
- Building strong brand communications, foster brand loyalty, and engage with customers through various channels.
- Learning brand management tools, techniques, and strategies to manage and grow brands in a dynamic market environment.

Learning outcomes

By studying this course, the students will be able to:

- Comprehend the importance of brands in building sustainable competitive advantage amidst global brands.
- Apply branding concepts resulting into major branding decisions.
- Instil the ability to build strong brands in the digital era.
- Manage branding activities in global markets.

SYLLABUS OF DSE-17

Unit 1: Brand Management **(12 hours)**

Brand: Concept, Importance, History, Brand Creation across different product categories, Challenges and Opportunities. Strategic Brand Management Process, Brand Equity- Concept, Customer Based Brand Equity, Sources of Brand Equity, Measurement (Qualitative & Quantitative research Techniques). Brand Knowledge, Brand Positioning- Concept, frame of reference, Guidelines. Brand Mantra.

Unit 2: Brand Building and Development **(12 hours)**

Brand Identity- Concept and elements, Criteria for choosing Brand Elements. Brand Makeovers, Aaker Brand Personality Framework, Legal Branding Considerations in India. Brand Building & Development -Brand Resonance Model, Brand Value Chain. Brand Architecture Strategy (Concept), Brand Extensions.

Unit 3: Branding in the Digital Era **(9 hours)**

Key Issues for Branding in Digital Era, Brand Engagement, Digital Communications, Social Media Channels, Mobile Marketing, Influencer Marketing, Content Marketing. Big Data & Marketing Analytics Dashboards- Concept, Importance for marketers.

Unit 4: Managing Global Brands **(12 hours)**

Market Performance - Comparative Methods to assess Brand Equity, Holistic Methods for valuing Brand Equity, Brand Valuation.

Managing Global Brands - Global Branding, Strategies for Creating & Managing Global Brands, Marketing Mix for Global Brands, Marketing to Consumers in Developed versus Developing markets.

References:

Essential

1. Keller, K.L., & Swaminathan, V., et al (2020). Strategic Brand Management: Building, Measuring, and Managing Brand Equity (5th Edition). Pearson.

Additional

Latest edition of the readings should be used.

1. Aaker D.A., &Joachimsthaler E. Brand Leadership: The Next Level of the Brand Revolution. The Free Press.
2. Aaker, J. L. Dimensions of brand personality. Journal of marketing research, 34(3), 347-356.
3. Chiaravalle, B., & Schenck, B.F. Branding for Dummies. Wiley India Edition.
4. Kapferer, J.N. The New Strategic Brand Management: Advanced Insights and Strategic Thinking (5th Edition). London: Kogan Page.
5. Keller, K.L. Conceptualizing, Measuring, and Managing Customer-Based Brand Equity. Journal Of Marketing 57, no 1 (1993);1-29.
6. Keller,K.L.; Sternthal,B. and Tybout, A.M. Three Questions You Need to Ask About Your Brand. Harvard Business Review 80, no 9 (2002);80-89.
7. Moorthi, Y. L. Brand Management: The Indian Context. Vikas Publishing House Pvt Limited.
8. Patel, V. N., & Sharma, S. Brand Management & Consumer Marketing. Oxford Book Company.
9. Upshaw, L. B. Building Brand Identity: A Strategy for Success in a Hostile Marketplace. Wiley Publications.
10. Verma H.V. Brand Management : Text and Cases. Excel Books.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 18 (DSE-18): BUSINESS TAX PLANNING

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Business Tax Planning (DSE 18)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course aims to provide an understanding to:

- Grasp key business tax principles and regulations.
- Develop strategies to minimize tax liabilities legally.
- Analyze the tax impact of business decisions.
- Use practical tax planning methods to optimize business tax positions.

Learning outcomes

By studying this course, the students will be able to:

- Identify the difference between Tax Evasion and Tax Planning.
- Describe how the provisions in the corporate tax laws can be used for tax planning.
- Understand the principles underlying the indirect taxation statutes with reference to Goods and Services Act.
- Compute the assessable value of transactions related to goods and services for levy and determination of duty liability.

SYLLABUS OF DSE-12

Unit 1: Tax Planning and Management **(9 hours)**

Tax Planning – Meaning, Features, Scope, Importance and Objectives; Difference between Tax Planning, Tax Avoidance and Tax Evasion; Tax Management – Meaning, Difference between Tax Planning and Tax Management; Problems of Tax Planning and Tax Management; Tax Planning for Corporate Entities – Tax Incentives, Tax Rebates, Tax Holidays, Concept of Minimum Alternate Tax (MAT), Tax on Distributed Profits of Domestic Companies.

Unit 2: Tax Planning For Financial Management Decisions **(12 hours)**

Tax Planning for Capital Structure Decision, Dividend Policy and Dividend Distribution Tax, Inter-Corporate Dividends and Bonus Shares, Tax Provisions Relating to Free Trade Zones, Infrastructure Sector and Backward Areas, Tax Deductions and Collection at Source, Advance Payment of Tax.

Unit 3: Introduction of Goods and Services Tax (GST) **(15 hours)**

Constitutional Framework of Indirect Taxes before GST, Rationale of GST, Dual GST Model, Structure of GST (SGST, CGST, UTGST & IGST), Supply of Goods and Services, Place of Supply – Intra-State,

Inter-State, Import and Export, Time of Supply, Valuation for GST, Exemption from GST – Small Supplies and Composition Scheme.

Unit 4: Input Tax Credit, Procedures and Special Provisions under GST (9 hours)

Input Tax Credit (ITC) – Meaning, Eligible and Ineligible Input Tax Credit, Blocked Credits, Tax Credit in respect of Capital Goods, Recovery of Excess Tax Credit, Transfer of Input Credit, Payment of Taxes, Doctrine of Unjust Enrichment, Reverse Charge, Illustrations on Calculation of GST and ITC

Procedures and Special Provisions – Registration, Tax Invoice, Credit and Debit Notes, Returns, GST Audit, Self-Assessment, Summary and Scrutiny, Taxability of E-Commerce, Anti-Profiteering, Avoidance of Dual Control, E-Way Bills, Zero Rated Supply, Offenses and Penalties, Appeals.

(Note: In case of any amendment on GST by the Government of India, the syllabus would be updated accordingly.)

References:

1. Ahuja, Girish & Gupta, Ravi. Simplified Approach to Corporate Tax Planning and Management. Bharat Publications. New Delhi.
2. Singhania, Vinod K. Direct Tax Planning and Management. Taxmann Publications.
3. Bansal, K.M., GST and Customs Law. Taxmann Publications.
4. Singhania, V.K. GST and Customs Law. Taxmann Publications.
5. Ahuja, G., and Gupta, R. Systematic Approach to Indirect Taxation (Including GST and Customs). Commercial Law Publisher.

DISCIPLINE SPECIFIC ELECTIVE COURSE 19 (DSE-19): BUSINESS VALUATION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Business Valuation (DSE 19)	4	3	1	0	Class 12	None

Learning Objectives

The course aims at:

- Providing an understanding of the key methods and frameworks used in business valuation, including both quantitative and qualitative approaches.
- Equippingstudents with the skills to analyze and interpret financial statements, enabling accurate assessment of a business's financial health and value.
- Developing the ability to assess external market conditions, industry trends, and risk factors that affect the value of a business.
- Applying various valuation techniques (such as discounted cash flow, comparable company analysis, and precedent transactions) in different business contexts like mergers, acquisitions, and investments.

Learning outcomes

By studying this course, the students will be able to:

- Apply key business valuation techniques (DCF, market comps, precedent transactions, asset-based methods) to estimate the value of a company in various scenarios.
- Interpret and critically analyze financial statements (income statement, balance sheet, cash flow) to assess the financial health and value drivers of a business.
- Assess and evaluate macroeconomic, industry, and company-specific factors, and incorporate risk elements into the valuation process.
- Make well-reasoned, defensible business valuation decisions based on solid financial data, market research, and strategic considerations.

SYLLABUS OF DSE-19

Unit 1: Introduction to Business Valuation **(6 hours)**

Genesis of Valuation; Need for valuation; Hindrances/Bottlenecks in valuation; Business Valuation Approaches; Principles of Valuation (Cost, price and Value); Purpose of Valuation: M & A, Sale of Business, Fund Raising, Voluntary Assessment; Taxation; Finance; Accounting; Industry perspective; Statutory Dimension; Society Angle.

Unit 2: Business Valuation Methods **(15 hours)**

Discounted Cash flow Valuation: Estimating discount rates- the cost of capital, Cash flow and valuation, valuation of companies: forecasting cash flows. Beyond valuation of companies: Growth, future value drivers, optimum capital structure.

Relative Valuation Method: Meaning, Reasons for popularity and potential pitfalls, Values and multiples- Earnings multiples, book value multiples, revenue multiples, and sector-specific multiples. Equity and Value multiples. Basic steps to using multiples. Reconciling relative and discounted cash flow valuation.

Unit 3: Valuations of Tangibles and Intangibles (12 hours)

Overview of valuation of Immovable Properties; Plant and Machinery; Equipments; vehicles; Capital Work in progress; Industrial Plots; land and Buildings; Vessels, ships, Barges etc. Definition of Intangible Assets; Categorization of Intangibles- Marketing Related (Trademarks, Trade names, Certification marks, internet domains), Customer or Supplier Related (Advertising Agreements, Licensing, Royalty Agreements, Servicing contracts, Franchise agreements), Technology related (Contractual or non-contractual rights to use: Patented or unpatented technologies, Data Bases, Formulae, Designs, Softwares, Process), Artistic Related (Royalties from artistic works: Plays, Books, Films, Music). Valuation of Human Resources.

Unit 4: Valuation in Mergers and Acquisitions (12 hours)

Meaning of business mergers, types; Sources of Synergy: revenue, operating expense, cost of capital, tax payments; effect of merger on the earnings per share; estimating synergy and its problems.

References:

1. Chandra, Prasanna. Corporate Valuation: A guide for Analysis, Managers and Investors. McGraw Hill Education Private Limited.
2. Damodaran, A. Damodaran on Valuation, Security Analysis for investment and Corporate Finance (2nd ed.). Wiley India Pvt. Ltd.
3. K. G., CA, &Sehrawat, N. K. Handbook on Valuation- Concept & Cases. New Delhi, Bharat Law House Pvt. Ltd.
4. Mohanty. Pitabas. Business Valuation (Text & Cases). Taxmann Publications Pvt Ltd.

Additional References:

1. Damodaran. Investment Valuation: Tools and Techniques for determining the value of any asset. 3rd Edition. Wiley India Pvt. Ltd.
2. Damodaran. Corporate Finance: Theory and Practical. 2nd Edition. Wiley India Pvt. Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC ELECTIVE COURSE 20 (DSE-20): STRATEGIC MANAGEMENT

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Strategic Management (DSE 20)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course aims to:

- Understand the key concepts, models, and frameworks used in strategic management.
- Analyze internal and external business environments for effective strategy formulation.
- Evaluate strategic options and decision-making processes at the corporate and business level.
- Develop strategic thinking and planning skills relevant to real-world organizational challenges.

Learning outcomes

By studying this course, the students will be able to:

- Explain core strategic management theories and their practical relevance.
- Demonstrate the ability to conduct SWOT and competitive analyses.
- Critically assess and compare alternative strategic choices for organizations.
- Apply strategic tools to formulate and present viable business strategies.

SYLLABUS OF DSE-20

Unit 1: Introduction to Strategic Management (3 hours)

Concept of Strategy & Strategic Management, Strategic Intent, Vision and Mission Statements, Strategic Management Process, Reasons for Strategy Failure, Value of Strategic management, Types of Strategies, Limitations of Strategic Management.

Unit 2: Environmental Analysis & Diagnosis (9 hours)

Strategy Analysis: Environmental Appraisal and Scanning Techniques, Need and Characteristics of environmental factors. Analysis of specific environment: Michael E. Porter's 5 Forces Model. Organisational Position and Strategic Advantage Profile, Internal Environment: Value of Systematic Internal Assessment, Profile of Company's Strengths and Weaknesses. SWOT, Michael Porter's Value Chain Analysis, Core Competencies, Core Capabilities and Competitive Advantage, 3 C's Model.

Unit 3: Strategy Formulation, Implementation & Control (24 hours)

Strategy formulation: Formulating Long-Term Objectives and Grand Strategies. Types of Strategies – Corporate Strategy, Business Strategy, Functional Strategy. Strategic Analysis and Choice: Strategic

Analysis at the Corporate Level. Grand Strategy Selection Matrix. Contingency Approach to Strategic Choice, Porter's Competitive Strategies, Portfolio Analysis, BCG Growth Share Matrix, GE Matrix.

Strategy implementation and control: Operationalizing the Strategy Annual Objectives. Implementation procedure of Strategy in an organization. Linking structure to strategy. Organizational leadership. Organizational culture. Managing the Strategy-Culture relationship. Strategic Control and Evaluation: Establishing Strategic Controls. Operational control systems, Balanced Scorecard Methodology.

Unit 4: Global Strategic Management (9 hours)

Global Strategic Planning: Competitive strategies for firms in foreign markets, Strategic Choice in a Global Context. Managing Global Sourcing Opportunities. Strategic Alliances, Types of Strategic Alliances and Business Decisions, Problems Involved in Strategic Alliances.

References:

Essential

1. Thompson Jr., Arthur A. and Strickland, A.J. (2003). Strategic Management –Concepts and Cases. McGraw-Hill College.
2. Pearce, J.A. , Robinson, R.B. & Mital, Amita (2017) . Strategic Management: Formulation, Implementation and Control. McGraw Hill Education.

Additional:

1. David, Fred R. & David, Forest R. (2016). Strategic Management: Concepts and Cases—A Competitive Advantage Approach. Pearson Publications.
2. Hill, Charles, W.L. & Gareth, R. Jones (2012). Strategic Management: An Integrated Approach. Cengage Learning. India.
3. Kazmi, Azhar (2014). Strategic Management and Business Policy. McGraw Hill Education.
4. Jauch, Lawrence R. & Glueck, William F. (1988). Business Policy and Strategic Management. McGraw-Hill Inc-US.
5. Ghosh P. K. (2012). Strategic Planning and Management. Sultan Chand & Sons. New Delhi.
6. Wheelan, Thomas, L., Hunger, J. David, Hoffman, Alan N. & Charles E. Bamford (2014). Strategic Management and Business Policy: Globalization, Innovation and Sustainability. Prentice Hall, New Jersey.
7. Thompson Jr., Arthur A. and Strickland A.J. et al. (2020). Crafting and Executing Strategy: Concepts & Cases. Mc Graw Hill Education.
8. Kim, W. Chan & Maubourgne, Renee (2004). Blue Ocean Strategy. Harvard Business Review.
9. Rivkin, Jan W. & Ghemawat, Pankaj (2002). Creating Competitive Advantage. Harvard Business Review.
10. Porter, Michael E (1990). The Competitive Advantage of Nations. Harvard Business Review.
11. Porter, Michael E. (1985). Competitive Advantage. The Free Press. New York
12. Levitt, Theodor. (1983). Globalization of Markets. Harvard Business Review.
13. Porter, Michael E. (1996). What is Strategy?. Harvard Business Review.
14. Prahalad, C. K., & Hamel, G. (1990). The Core Competence of the Corporation. Harvard Business Review.

DISCIPLINE SPECIFIC ELECTIVE COURSE 21 (DSE-21): APPLIED ECONOMETRICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Applied Econometrics (DSE 21)	4	3	0	1	Class 12	Knowledge of Basic Econometrics

Learning Objectives

The course aims at:

- Illustrate key econometric methods (e.g., OLS, IV, GMM) and apply them to real-world data.
- Develop data analysis skills, including data cleaning, model estimation, and diagnostic testing.
- Conduct causal inference and understand the implications of model assumptions and violations.
- Interpret and communicate econometric results effectively for both technical and non-technical audiences.

Learning outcomes

By studying this course, the students will be able to:

- Formulate and interpret regression results obtained from software packages.
- Identify the errors in regression models and rectify the same.
- Analyse the suitability of different models for solving the problem at hand
- Understand the theoretical basis for techniques widely used in empirical research and consider their application in a wide range of problems.

SYLLABUS OF DSE-21

Unit 1: Empirical Model **(3 hours)**

Stages in empirical econometric research

Unit 2: Linear Regression Model **(9 hours)**

The linear regression model in matrix form. Estimation, specification and diagnostic testing.

Unit 3: Instrumental Variable Estimation **(12 hours)**

Omitted variable in a simple regression model. IV estimation and two stage least squares.

Unit 4: Panel Data Regression **(12 hours)**

Independent pooled cross section regression, fixed and random effects models.

Unit 5: Limited Dependent Model **(9 hours)**

Logit and Probit models for binary responses.

Practical: (15 practical sessions; total 30 Hours)

To learn the use of an econometric package STATA/Python/R or any other appropriate one.
To extract data from recognized databases and to execute models from each of the units listed in this each course.

References

1. Gujarati, D. (2014). Econometrics by example, 2nded.Palgrave Macmillan.
2. Gujarati, D., Porter, D. (2012). Basic econometrics, 5th ed.McGraw-Hill
3. Wooldridge, J. (2014). Introduction to econometrics: A modern approach, 5th ed.Cengage Learning.

Additional References:

1. Asteriou, D., & Hall, S. G. (2011). Applied econometrics. Palgrave Macmillan.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. Honours Business Economics
Generic Elective Courses
GE-1: Principles of Microeconomics

Course Title and Code	Credits	Credit distribution of the course			Eligibility Criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/Practice		
Principles of Microeconomics	**4**	**3**	**1**	**0**	**Class XII**	**None**

Learning Objectives

This course aims to:
(i) develop a theoretical understanding of strategic behaviour of economic agents and functioning of a market economy through demand and supply
(ii) offer understanding of the basic principles of micro economics like problem of scarcity and choice, elasticity, optimisation of resources
(iii) introduce students with concepts of consumer theory, production and cost, analysis of individual choices
(iv) equilibrium outcomes and how they are determined by changing market and social conditions
(v) impart sufficient examples based on real economy from both local and global perspective.
(vi) offer sound knowledge and skill to use the managerial economics concepts and techniques for effective management planning, evaluating performance and making decisions.

Learning Outcomes
By studying this course, students will be able to:
(i) to assess the economic analysis method, with reference to cost-benefit analysis of private and public actions.
(ii) compare and contrast production and cost in short run and long run
(iii) to identify and evaluate various models of different markets, and the price and output decisions for maximizing profit
(iv) understand the links between household and firm behavior and the economic models of demand.
(v) use the microeconomic theory and principles to current issues and evaluate related public policy initiatives and response

Unit I: - Introductory concepts and methods **[8 hours]**

Scope of Economics, Three principles: optimization, equilibrium and evidence. Markets, Demand and supply curves: individual and aggregate and shifts.

Unit: II : Foundations of Microeconomics **[12 hours]**

Preferences, price and income changes and the demand curve; consumer surplus and elasticities.
Production, cost curves and revenue curves. Supply curve and its elasticity; long and the short run; producer surplus. Competitive equilibrium, entry and exit; economic and accounting profit.
Perfect competition and pareto efficiency; resource allocation; deadweight loss; equity and efficiency.

Unit III: Trade, Externalities and Factor Markets **[12 hours]**

Production possibility curve and opportunity cost. Basis of trade: absolute and comparative advantage. Trade between states and between countries. Arguments against free trade.
Externalities positive and negative; private solutions and government solutions. Public goods and common goods.
Markets for factors of production; labour, physical capital and land. The supply of labour and wage inequality.

Unit IV : Market Structure **[13 hours]**

Sources of market power. The monopolist: revenue curves, optimal quantity and price. Price discrimination and government policy towards monopoly.
Oligopoly models with homogenous and non-homogenous products. Monopolistic competition: short run and long run equilibrium.

Essential Readings

Acemoglu Daron, David Laibson, List John, Microeconomics, Pearson 2019

Additional Readings

Core Econ Team, The Economy 1.0 and The Economy 2.0, www.core-econ.org

Case, K.E., Fair, R.C., Sharon O., Principles of Economics, Pearson

B.A. Honours Business Economics

Generic Elective Courses

GE -2: Principles of Macroeconomics

Course Title and Code	Credits	Credit distribution of the course			Eligibility Criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/Practice		
Principles of Macroeconomics	**4**	**3**	**1**	**0**	**Class XII**	**None**

Learning Objectives

This course aims at inculcating an understanding:

(i) key macroeconomic variables with a sound understanding of aggregate economic accounts and definitions.
(ii) the differences between real and nominal variables, how GDP is measured and its limited applicability to welfare.
(iii) equilibrium under different assumptions on aggregate demand and supply.
(iv) the relation between wages, prices, unemployment under different models
(v) the concept of open economy and how it determines the balance of payments, types of exchange rates.

Learning Outcomes
By studying this course, the students will be able to:

(i) understand the basic principles of and definitions of national income accounting and determination of GDP
(ii) understand basics of consumption function and different hypotheses regarding aggregate consumption behavior. ·
(iii) derive wage setting, price setting relations and labour market equilibrium. ·
(iv) learn about the key determinants of economic growth through the lens of the solow/neoclassical growth model and the difference between growth through capital accumulation and technological progress
(v) identify key macroeconomic indicators and measures of economic change, growth, and development.
(vi) apply economic theories and concepts to contemporary social issues, as well as formulation and analysis of policy.
(vii) apply basic international trade and finance concepts to global pricing issues, including working with exchange rates

Unit I: National Income and Production **[10 hours]**

Macroeconomic questions. National Income Accounts: circular flow, production income and expenditure. Limitations of GDP; real and nominal. Productivity and Incomes, Inequality of incomes and productivity and measurement. Aggregate production function and its representation. Determinants of technology.

Unit II: Economic Growth and Development **[5 hours]**

Growth and its patterns and its determinants. History of economic growth. Growth, inequality and poverty. Solow Growth Model.

Unit III: Macroeconomic Equilibrium **[15 hours]**

Measuring employment and unemployment. Labor market equilibrium and unemployment structural & cyclical. Natural rate of unemployment.
Credit markets, interest rates and supply and demand curves for credit and equilibrium. Banks & financial intermediation. Functions of banks.
Monetary system: money, types and money supply. Quantity theory of money. Inflation: causes, consequences, social costs and benefits. Central bank functions and objectives of monetary policy. Bank reserves and demand, supply of federal funds.

Unit IV: Fluctuations and Policy Interventions **[15 hours]**

Economic fluctuations and business cycles. Sources of fluctuations, multipliers, equilibrium in the short and the medium run.
Countercyclical monetary policy: controlling repo rate and other tools. Countercyclical fiscal policy: expenditure based, taxation based and others.

Essential Readings:-

Macroeconomics, Daron Acemoglu, David Laibson, John List, Peerson 2023.

Additional Readings

Core Econ Team, The Economy 1.0 and The Economy 2.0, www.core-econ.org
Case, K.E., Fair, R.C., Sharon O., Principles of Economics, Pearson

GENERIC ELECTIVES (GE-3): LEGAL ENVIRONMENT OF BUSINESS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Legal Environment of Business (GEC 3)	4	3	1	0	Class 12	None

Learning Objectives

The course intends:

- To familiarize the student with the concept and essentials of Indian Contract act which govern business for its efficient conduct and to apply them in real life situations.
- To explain the meaning, nature and incorporation of a company.
- To make students understand and apply the provisions of Sale of Goods Act and Consumer Protection Act.
- To recognize and articulate legal principles related to Limited Liability Partnership and Information Technology Act.

Learning outcomes

By studying this course, students will be able to:

- To understand the basic rules and provisions of Contract and Agreements.
- To know the provisions to Formation and functioning of company and LLP.
- To understand the significance and role of law of sale of goods act
- To have in- depth knowledge of Information Technology Act And legal framework of right to Privacy, Data Security and Data Protection.
- Apply the law correctly to different facts and in different contexts

SYLLABUS OF GEC-3

Unit 1: Indian Contract Act **(12 hours)**

Meaning and Essentials of a Contract; Valid, Void and Voidable Contract; Offer and Acceptance; Consideration; Capacity of Parties; Free Consent; Discharge of Contract and Remedies for Breach of a Contract.

Unit 2: Companies Act **(12 hours)**

Meaning and Nature of Company; Promotion and Incorporation of a Company; Memorandum of Association; Articles of Association; Misleading Prospectus and

remedies available to the parties; Board of Directors and their qualification, duties, powers. Company Meetings and Resolutions.

Unit 3: Sale of Goods Act and Consumer Protection Act (12 hours)

Essentials of a Contract of Sale; Sale and Agreement to Sell, Conditions and Warranties; Transfer of Title by Non-Owners; Doctrine of Caveat Emptor; Rights of Unpaid Seller.**Consumer Protection Act 2009**: Scope and Applicability of the Act. Rights of consumer. Procedure for complaints. Duties and power of Central Consumer Protection Authority.

Unit 4: Limited Liability Partnership Act and IT Act (9 hours)

Meaning and nature of LLP; LLP and Company; LLP Agreement, Partners and Designated Partners, Incorporation of LLP; Partners and their Relations, Extent and limitation of liability of LLP.

Information Technology Act 2000: Concept and role; Digital signature, Electronic governance, Attribution, Acknowledgement and dispatch of electronic records, Regulation of certifying authorities, Digital signatures certificates, Duties of subscribers, Penalties and adjudication, Appellate Tribunal , Offences.

Essential/recommended readings

1. Bansal, V & Arora, A. Corporate Laws. Vikas Publishing, House (P) Ltd. New Delhi.
2. Kuchhal M.C & Vivek K. Business Legislation for Management. VIKAS Publishing House (P) Ltd.
3. Kumar, A. Corporate Laws. International Book House (P) Ltd.
4. Bare Acts relating to the laws.

Suggestive readings

1. Chadha, R,. Chadha, S. Corporate Laws. Mayur Paperbacks. New Delhi.
2. Maheshwari & Maheshwari. Business Law. National Publishing House. New Delhi.
3. Singh, Avtar. The Principles of Mercantile Law. Eastern Book Company. Lucknow.
4. Tulsian, P.C. Business Law. Tata McGraw Hill. New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4): STATISTICS FOR BUSINESS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Statistics for Business (GE4)	**4**	**3**	**0**	**1**	**Class 12**	**Mathematics at Class 12 level**

Learning Objectives

The objective of this course is to enable students to:

- Describe data using summary statistics.
- Develop detailed understanding of discrete and continuous distributions.
- Develop skills in statistical computing, statistical reasoning and inferential methods.
- Comprehend and analyse real data like real indices.

Learning outcomes

By studying this course, students will be able to:

- Learn tools and concepts of statistical analysis and interpretation.
- Comprehend fundamentals of probability theory.
- Develop skills in statistical computing, statistical reasoning and inferential methods.
- Comprehend and analyse real data like real indices.

SYLLABUS OF GE-4

Unit 1: Descriptive Statistics and Exploratory Data Analysis (15 hours)

Types of Variables (Quantitative, Qualitative, discrete, continuous), Scales of Data Measurement (nominal, ordinal, Interval & Ratio), Variable-; Primary & secondary Data.

Frequency distributions, Relative Frequency, Cumulative Distributions, Percentiles, Quartiles; Graphical representation of data- bar charts, pie, histograms, box plots.

Measures of central tendency: Mean, median, mode, Geometric Mean, Harmonic Mean, Weighted Mean & their properties. Selection of a measure of central tendency.

Measures of Dispersion: Range, inter-quartile range, quartile deviation, mean deviation, standard deviation, variance, coefficient of variance, properties of standard deviation, merits & demerits.

Skewness and Kurtosis: Meaning, measures- Karl Pearson, Bowley, Kelly's, Kurtosis- meaning, Moments, Kurtosis

Bivariate Analysis: Cross-tabulations and Scatter diagram; Correlation, Association and Simple Regression.

Unit 2: Probability (12 hours)

Axioms of probability; Review of counting rules, experiments, sample space, simple and complex events; Addition and multiplication rules; Concepts of Mutually exclusive events, independent events; Concepts of Joint, marginal and conditional probability; Permutation and Combinations

Concept of Discrete and continuous Random Variables; Expected value and variance; Examples of Theoretical Discrete and Continuous Probability Distributions – Binomial, Poisson and Normal distributions.

Unit 3: Sampling, Estimation and Hypotheses (15 hours)

Population versus Sample; Sample Statistics versus population parameters; Definition and Statistical properties of a Random Sample; Point and Interval Estimation and Small Sample Properties of Estimators (unbiasedness, efficiency); Central Limit Theorem. (Interval estimation for mean for large samples)

Basic concepts of Hypotheses Testing: Formulation of Null and Alternate Hypotheses; One-tailed and two-tailed Tests about population Mean; Concepts of Type I and Type II errors. (Hypothesis testing for mean and difference between mean for large samples only)

Unit 4: Index Numbers (6 hours)

Index Numbers: Use and construction of Laspeyres and Paasche index numbers; Fixed and chain base index numbers; Base shifting, splicing and deflating. Construction of real indexes: Consumer Price Index and BSE index.

Practical Component (30 hours) : Practicals to be based on a spreadsheet package (Microsoft Excel or equivalent) to enable the student to execute all the measures and tests taken up in the theory classes in the course.

Essential/recommended readings

1. Spiegel, M.R.(2003). Theory & Problems of Statistics, Schaum's outline series, McGraw Hill.
2. Levin, Richard I. and Rubin, David (1998). Statistics for Management (7th Edition), Pearson.
3. Gupta, S.C. (2018). Fundamentals of Statistics, Himalaya Publishing House
4. Spiegel, M. and Stephens, Larry (2017). Statistics (Schaum's Outline Series), Tata-Mcgraw-Hill, New Delhi

Suggestive readings

1 Nagar, A. L. and Das. R. K.. Basic Statistics (2nd Edition), Oxford University Press

2. Karmel, P. H. and Polasek, M. (1978). Applied Statistics for Economists (4th edition), Pitman.
3. Larsen, Richard J. and Marx, Morris L. (2011). An Introduction to Mathematical Statistics and its Applications. Prentice Hall.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5): QUANTITATIVE TECHNIQUES IN

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Quantitative Techniques in Management (GEC 5)	4	3	1	0	Class 12	None

Learning Objectives

To apprise students:

- To understand the concepts, formulation and interpretation of linear programming methods and its application in diverse problems.
- To formulate and solve Transportation and Assignment problems
- To understand basic concept, construction of the Network diagram and Critical Path Analysis
- To introduce game theory and network analysis forms part of the course.

Learning outcomes

By studying this course, students will be able to:

- Identify and develop operational research models from the verbal description of the real system.
- Understand the mathematical tools that are needed to solve optimization problems.
- Develop critical thinking and use PERT and CPM techniques to improve decision making.

SYLLABUS OF GEC-5

UNIT – I: Introduction - Operations Research, Linear Programming (15 hours)

(i) Introduction to Operations Research, characteristics, Phases, Methodology, Applications and scope

(ii) Formulation of Linear Programming problems, Graphical Solutions (Special cases: Multiple optimal solution, infeasibility, unbounded solution); Simplex Method, Special cases, Big-M method and Two-phase method; Duality (emphasis on formulation & economic interpretation); Sensitivity Analysis. (Excel Solver application)

UNIT – II:Transportation and Assignment Problem (12 hours)

(i) Transportation Problem: Formulation, Solution by N.W. Corner Rule, Least Cost method, Vogel's Approximation Method (VAM), Modified Distribution Method; Special cases: Multiple Solutions, Maximization case, unbalanced case, prohibited routes.

(ii) Assignment Problem: Hungarian Method, Special cases: Multiple Solutions, Maximization case, Unbalanced case, Restrictions on assignment.

UNIT – III: Network Analysis (9 hours)

Basic Concept, Construction of the Network diagram, Critical Path Analysis, float and slack analysis (Total float, free float, independent float), probability consideration in PERT (Interface with Project Management open-source software)

UNIT – IV: Decision Theory (9 hours)

Decision making environment, Construction of Pay off Table, Opportunity Loss Table, Decision under uncertainty. Decision under Conflict: Game Theory, Two-person Zero-Sum games, Maximin Minimax Principle, Games without Saddle point - Mixed strategy, Dominance Rule.

Essential/recommended readings

1. Vohra, N.D., Quantitative Techniques in Management (5th ed.). Tata McGraw Hill
2. Swarup, K., Gupta, P.K. and Mohan, Man, Introduction to Management Science Operations Research (19th ed.). Sultan Chand & Sons.
3. Sharma, J.K., Operations Research: Theory and Applications (6th ed.). Trinity.
4. Taha, H.A., Operations Research: An Introduction (9th ed.). Pearson.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6): INTRODUCTION TO FINANCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Finance (GE6)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

This course aims at providing a comprehensive introduction to:

- Financial system and its primary constituents.
- Sources of finance and time value of money.
- Basics of Investment and various asset classes.
- Key concepts of international financial management.

Learning outcomes

By studying this course, students will be able to:

Understand the meaning, scope and sources of Finance

· Estimate the present and future values of assets

· Examine the relationship between risk and return, and the nature and sources of risk in a stock market context

· Analyse the currency exchange market to deal exchange rate risk.

SYLLABUS OF GE-6

UNIT – I: A Primer on Financial Markets & Institutions (9 hours)
An overview of financial system: characteristics & requirements. Components & functions of financial system. Financial markets: characteristics & types. Types & role of Financial Institutions.An overview of the 2007–2008 Financial Crisis.

Unit 2: Corporate Finance: An Overview (12 hours)
Nature, scope and objectives of Finance, Emerging role of Finance Managers in India and Agency problem.Concept & Meaning of Financial Management, goals of financial management, the three financial decisions- Investing, Financing & Dividend.
Sources of Finance: Equity & Preference Capital, Retained earnings, Debt, Bonds, Long term loans, Short term advances from banks, public deposits & advances from customers and trade creditors.
Concept of Time Value of Money, Compound Value, Present Value, Annuity and Perpetuity.

Unit 3: Investment Management: Basics & Process (15 hours)
An overview of investment- Investment process, Types of assets- real & financial.Types of investors, types of financial securities & attributes of a good investment.
Concept of Risk & Return (Single asset), risk-return trade off, types of risk- systematic & unsystematic, types of return-holding period return, expected return, actual return.
Examining four broad asset classes: equity, bonds, mutual funds & derivatives.
Equity- three schools of thought on equity valuation- a brief discussion on fundamental analysis, technical analysis and efficient market hypothesis.

Bonds- types, fundamentals, relationship between interest rates & bond prices& yield curve.
Mutual Funds– meaning, importance, structure, mutual fund schemes, Systematic Investment Plan (SIP), Systematic Withdrawal Plan (SWP), Exchange Traded Fund (ETF), Equity Linked Savings Scheme (ELSS) and NAV of Fund.
Derivatives – Meaning and Types of Derivative Instruments (Forwards, Futures, Options and Swaps).
Concept of diversification & portfolios.Portfolio Risk & Return(two security only).

Unit 4: A Beginners' Guide to International Finance (9hours)

International Monetary System- development of international finance and how the international monetary system evolved. Currency exchange markets and rates- currency exchange markets, exchange rate quotations, currency exchange rate appreciation and, depreciation, factors that affect currency exchange rates and arbitrage. Conducting business internationally. Concept of exchange rate risk.

Essential/recommended readings

1. Bodie, Zvi., Kane, Alex and Marcus, Alan J.. Investments. McGraw Hill.
2. Chandra, P.. Security Analysis and Portfolio Management. Tata McGraw Hill.
3. Pathak, Bharati. Indian Financial System. Pearson.
4. Ronald, W. Melicher and Norton, Edgar A.. Introduction to Finance: Financial Markets, Investment, and Financial Management. Wiley Publishing House. 2012.
5. Rustagi, R.P., Fundamentals of Financial Management. Taxmann.

Suggestive readings

1. Khan, M. Y & Jain P. K., Financial Management: Text and Problems. Tata McGraw Hill. New Delhi.
2. Kohn, Meir. Financial Institutions and Markets. Oxford University Press.
3. Kidwell, David S., Backwell, David W., Whidbee, David A. and Sias, Richard W. Financial Institutions, Markets and Money. Wiley Publications.
4. Madura, Jeff. Financial Markets and Institutions. South Western Cengage Learning.
5. Reilly, Frank K, and Brown, Keith C. Investment Analysis and Portfolio Management. Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-7): ECONOMICS OF STARTUPS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Economics of Startups (GEC 7)	4	3	1	0	Class 12	None

Learning Objectives

To apprise students:

- To give an overview of startups and its types that would help students to understand basics of starting up new ventures.
- To build and create a successful Business Plan
- To understand various Business models and learn startups
- To familiarize with central and state level institutions supporting small business entreprises.

Learning outcomes

By studying this course, students will be able to:

. · Understand the process and working of a startup.

· Identify the different ways in which entrepreneurs manifest in start-ups.

· Know how to create one's own business venture and the various factors that influence successful set-up and sustainable operations.

· Explore the funding and other institutions supporting small business units.

SYLLABUS OF GEC-7

UNIT – I: Startup, Generation & Experimentation (9 hours)

Concept of Startup, Role of digital technologies, Startup ecosystems, the startup movement in India; Generating a value proposition, how valuable are new ideas, Design thinking principles; Experimenting with the prototype, Introduction to lean start-ups, Lean startup principles, Learning and failing fast.

UNIT – II: Building the Business Plan (15 hours)

Beginning Considerations: Building a competitive advantage. The strategic management processes. Conducting a feasibility analysis. Forms of Business ownership. Franchising and entrepreneurship. Buying an existing business, marketing and financial considerations: Building a powerful marketing plan. E-commerce and Entrepreneur. Pricing strategies. Creating a successful financial plan. Choosing the right location and layout.

UNIT – III: Crafting business models and Lean Start-ups (12 hours)

Introduction to business models; Creating value propositions-conventional industry logic, value innovation logic; customer focused innovation; building and analysing business models; Business model canvas, Business Pitching.

UNIT – IV: Institutions Supporting Small Business Enterprises and Ethics(9 hours)

Central level institutions. State level institutions. Other agencies. Industry Associations. Class exercise- discussions on current government schemes supporting entrepreneurship and finding out which scheme will most suit the business plan devised by the student. Importance of Ethical Entrepreneurship, value of ethics to an entrepreneur.

Essential/recommended readings

1. Scarborough, N. M., Cornwall, J. R., & Zimmerer, T. (2016). Essentials of entrepreneurship and small business management. Boston. Pearson Publications.
2. Hisrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A., Entrepreneurship, Tata McGraw Hill.
3. Shukla, M.B., Entrepreneurship and Small Business Management. Kitab Mahal Publishers.

Suggestive readings

1. Hishrich, R.D. and Peters, M. Entrepreneurship. Irwin Publications.
2. Barringer, B.R. and Ireland, R. Duane. Entrepreneurship: Successfully launching new ventures. (6th Edition) Pearson
3. Kuratko, D.F., and Rao, T.V., Entrepreneurship: A South-Asian Perspective. Cengage Publications.
4. Shankar, R., Entrepreneurship: Theory and Practice. Tata McGraw Hill.
5. Kathleen, R Allen. Launching New Ventures: An Entrepreneurial Approach. Cengage Learning.
6. Fisher, Steve and Duane, Ja-Nae. The Startup Equation - A Visual Guidebook for Building Your Startup. Mc Graw Hill Education India Pvt. Ltd.

Note: **Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

REGISTRAR

GENERIC ELECTIVES (GE-8): ENVIRONMENTAL ECONOMICS AND

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Environmental Economics and Climate Change (GE8)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

This course aims at inculcating an understanding of:

- How economic activities are affecting the environment.
- Social value of environmental resources.
- Climate change and its consequences.
- Efficient and effective policy measures for protecting the environment.

Learning outcomes

By studying this course, students will be able to:

. · Understand the linkage between environment and economics.

· Learn the basic theories of environmental economics.

· Understand the basic terminologies related to environment and Climate change.

· Analyse the effects of climate change on India and its future plan for environmental protection and mitigation.

SYLLABUS OF GE-8

UNIT – I: Introduction (8 hours)
Introduction to Environmental Economics, Material Balance model- economy environmental interactions, reasons for environmental degradation (population, technology, GDP), balance between environment and growth.

Unit 2: Economic Growth and Environmental Degradation (12 hours)
Theories of relationship between economic growth and environmental degradation: The environmental Kuznets curve hypothesis, The Brundtland Curve hypothesis, The environment Daly Curve hypothesis.

Unit 3: Climate Change and its Challenges (12 hours)
Introduction to the Climate Change, Drivers of Climate Change, Global impacts of Climate Change: Anthropogenic, Global warming, ozone hole, biodiversity loss, ecosystem services, natural capital and resources. Effect of Climate Change on India: Agriculture, Biodiversity, vulnerability of Coastal Belt, Rural Livelihoods and Food Security in India.

Unit 4: Actions Taken and Policy Framework (13 hours)
Global Level: Adaptation and Mitigation, Governmental and Intergovernmental Actions to Combat Climate Change: The Role of the Intergovernmental Panel on Climate Change (IPCC), United Nations Framework Convention on Climate Change, The Kyoto Protocol, Paris Agreement etc. The global

carbon market (CDM, JI, ET).India's Position on International Climate Negotiations, India's National Action Plan on Climate Change.

Essential/recommended readings

1. Callen,Thomas (2007). Environmental Economics, Thomson Learning Inc. Indian Edition.
2. Dubash, Navroz (2012). Handbook of Climate Change and India: Development, Politics and Governance, Earthscan
3. Bhattacharya, R. N. (ed.) (2001). Environmental Economics, An Indian Perspective, Oxford University Press.

Suggestive readings

1. Romm, J.J. 2018. Climate change: What Everyone Needs to Know. Oxford University Press
2. Dash. S.K. 2008. Climate Change, Cambridge University Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-9): INTERNATIONAL ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
International Economics (GE9)	**4**	**3**	**1**	**0**	**Class XII**	**NA**

Learning Objectives

This course aims at inculcating:

- Basic understanding of fundamentals of international Trade
- An overview of theories of international trade
- Understand the meaning of Balance of Payment and explore the reasons of disequilibrium.
- Determine exchange rates and understand global capital market

Learning outcomes

By studying this course, students will be able to:

- To understand basic concept and origin of International economics through the prism of classical and new classical trade theories
- To understand different terms of trade and their applicability
- To differentiate between Modern and Classical Trade theories.
- To gain knowledge about the foreign exchange markets and its working
- To learn about global capital market

SYLLABUS OF GE-9

UNIT – I: Introduction to International Trade [12hours]

Globalization and its growing importance in the world economy; Impact of globalization; International business contrasted with domestic businesses; Cost and benefit analysis of tariff, Effective rate of protection and welfare arguments of tariff and developing countries. Foreign direct investment (FDI) in world economy: Trends, Direction, and flow of FDI; Theories of FDI; Political ideology and FDI.

Unit 2: International Trade Theory [15hours]

World Trade: An overview; Theories of international trade – Mercantilism; Absolute advantage theory, Comparative advantage theory, Factory proportion theory and Leontief paradox, Product life cycle theory, New trade theory, National competitive advantage:

Porter's diamond. International Business Environment: Economic, Demographic, Cultural and Political-legal environment.

Unit 3: Balance of Payment (BoP) [6hours]

Balance of Payment: Meaning, Components (Current, Capital and Official reserve), Reasons for disequilibrium in BoP, Measures to correct disequilibrium, Understanding India's BoP and comparing it with markets like USA and China.

Unit 4: Foreign Exchange and Global Capital Market [12hours]

Exchange Rate Determination: Currency Demand and Supply Curves, Factors Affecting Exchange Rate, Global Capital Market: Introduction, Benefits of global capital market, Growth of global capital market, Global capital market risk, Eurocurrency market, Global bond market, Global equity market, Exchange rate risk, Managing exchange rate risk, Methods of Financing International Trade.

Essential/recommended readings

1. Hill, C. (2021). International business: Competing in the global market place (13th Edition). *Strategic Direction*.

2. Krugman, P. R., & Obstfeld, M. (2009). International economics: Theory and policy. Pearson Education.

3. Levi, M.D. (2009). *International Finance* (5th Edition), Taylor and Francis Ltd.

4. Madura, J. (2020). *International financial management*. Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-10): INDIAN FINANCIAL SYSTEM

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Indian Financial System (GE10)	**4**	**3**	**1**	**0**	**Class 12**	**None**

Learning Objectives

The course attempts to develop an understanding of:
(i) the history and role of the Indian Financial System in economic development
(ii) the role and importance of financial markets; capital, equity and money markets
(iii) commercial banks, development banks, NBFCs - risk and NPAs; role of ARCs.
(iv) role of financial services in credit market

Learning outcomes

By studying this course, students will be able to:

. Analyse the financial market processes and their factors, and make successful financial decisions at an individual as well as company level.

· Evaluate various ways of raising funds from the financial markets domestically or internationally for the company.

· Study the considerations of banking and other financial institutions in real life.

· Evaluate various financial services offered under financial system of India.

SYLLABUS OF GE-10

UNIT – I: Financial System: An Introduction (6 hours)

Financial System: meaning, characteristics, significance and components; tracing the history of the Indian financial system and its contribution to Economic Development; markets, regulators and participants in the Indian financial system; financial instruments, direct and indirect finance, scams in Indian Financial System.

Unit 2: Financial Markets (18 hours)

Financial Markets – meaning, types, role, importance, and securities traded; linkages between financial markets and economy. Capital market – meaning, functions, organisation; Equity market – primary and secondary market, ways of raising funds, private equity, venture capital, introduction to debt market. Money market – meaning, functions, organisation, participants, instruments, trading mechanism, role of central bank.

Unit 3: Financial Institutions (9 hours)

Commercial Banking, Nationalisation of Commercial Banks, Structure of Commercial Banks in India, Depository and Non-Depository Institutions, Universal Banking, Payments Bank, Development Banks (IFCI, IDBI, NABARD and NHB), NBFCs, Risk Management in Banks, ARCs Problem of NPAs.

Unit 4: Financial Services (12 hours)

Credit Rating – Meaning, Process, Rating Methodology, Rating Symbols and Rating Agencies.
Insurance – Meaning, Importance, Types, Seven Principles and Regulation.
Leasing – Meaning, Features and Types of Leasing; Concept of Hire Purchase, Difference between Hire Purchase and Leasing; Factoring – Meaning, Functions, Types and Procedure; Forfaiting – Meaning, Process, Characteristics, Types, Advantages, Difference between Forfaiting and Factoring; Investment Banking – Meaning, Importance and Services Offered by Investment Bankers.

Essential/recommended readings

1 Khan, M.Y. Indian Financial System. Tata McGraw Hill.

2. Bhole, L.M. Financial Institutions and Markets. Tata McGraw Hill.

3. Varshney, P.N. and Mittal, D.K. Indian Financial System. Sultan Chand & Sons.

4. Pathak, Bharati. Indian Financial System. Pearson Publications.

5. Shahani, Rakesh. Financial Markets in India: A Research Initiative. Anamica Publishing Co.

Suggestive readings

1. Gordon, E. &Natarajan, K. Financial Markets and Services. Himalaya Publishing House.

2. Gupta, Shashi, Aggarwal, Nisha and Gupta, Neeti. Indian Financial System.Kalyani Publishers.

3. Kumar, Vinod., Gupta, Atul. andKaur, Manmeet. Financial Markets, Institutions and Services, Taxmann Publications.

4. Madura, Jeff. Financial Markets and Institutions. South Western Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-11): ECONOMIC POLICY FRAMEWORK

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Economic Policy Framework (GE11)	4	3	1	0	Class 12	None

Learning Objectives

This course will help students

- to understand the importance, meaning and objective of macroeconomic policies
- to understand role and effect of fiscal policy and government expenditure
- to explore role of monetary policy and banking sector in India
- to analyse efficacy of fiscal/monetary policy under fixed and flexible exchange rate

Learning outcomes

By studying this course, students will be able to:

. · Learn the basic concept of macroeconomics

· Understand how different parameters of macroeconomics work under Indian economy.

· Understand how monetary and fiscal policy works.

· Know different exchange rate regimes.

SYLLABUS OF GE-11

UNIT – I: Meaning and objectives of economic policy (8 hours)

Tools and goals (objectives and instruments of policy) Circular flow of income (start with a two sector model and go up to a five sector model); National Income aggregates and the related concepts of national income; input-output table to calculate national income using the income, expenditure and the value added methods.

Unit 2: Fiscal policy (15 hours)

Objectives and meaning; effect of fiscal policy - role of tax policy (T) and government expenditure (G), Aggregate Demand, Meaning of the multiplier. Government expenditure multiplier and balanced budget multiplier Budget –meaning and purpose – example of India's latest Budget (and various heads). Meaning of fiscal, revenue and primary deficits.

Unit 3: Monetary policy (12 hours)

Meaning and objectives; money and credit – credit creation and instruments of credit control; Inflation targeting, Banking in India – structure, recent developments; issues of NPAs and how to resolve it.

Unit 4: Exchange rate policy **(10 hours)**

Structure of BOP; meaning of current account deficit and trade deficit; exchange rate definition (real and nominal); fixed vs flexible exchange rate, efficacy of fiscal/monetary policy under fixed and flexible exchange rate , effect of a change in exchange rate on the current account (imports and exports); structure of capital account and role of capital outflows and inflows.

Essential/recommended readings

1Gupta G.S (2016), Macroeconomics - Theory and Applications (4th edition). McGraw Hill,

2. Shapiro, Edward (1982), Macroeconomic Theory, 5th edition

3. Mankiw, Gregory N. (2010), Macroeconomics (7th edition), Worth Publishers.

4. Sikdar, Soumyen (2011), Principles of Macroeconomics, Oxford University Press

5. Krugman, P.R., Obstfeld, M. and Melitz, M. (2015). International Economics: Theory and Policy, Pearson Education Limited.

6. Dua, P. (2020). Monetary Policy Framework in India, Indian Economic Review, 55(1), June 2020, pp. 117-154.

9. http://www.inclusivejournal.in/about.html.

10. Sengupta, R. and Vardhan, H., Non-Performing Assets in Indian Banks, Economic and Political Weekly, 52(12) March 25, 2017, Money, Banking and Finance Special.

11. Economic Survey, India, latest issue

12. Union Budget Statement, India, Latest issue

Suggestive readings

1Abel, Andrew, Bernanke, Ben and Croushore, Dean (2011). Macroeconomics (7th edition). Pearson

2. Ghate, C., & Kletzer, K. M. (eds.) (2016). Monetary policy in India: A modern macroeconomic perspective. Springer.

3. Kaul, Vivek (2020) Bad Money: Inside the NPA Mess and how it threatens the Indian Banking System, Harper Collins Publisher India.

4. Chhibber, Ajay and Anees, Salman Soz (2021) India's Financial Sector: A Whodunnit. In Unshackling India. Haper Collins Publishers India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-12): BASIC ECONOMETRICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Basic Econometrics (GE12)	**4**	**3**	**0**	**1**	**Class 12**	**Knowledge of Inferential and descriptive Statistics**

Learning Objectives

The course intends to explain to the student:
(i) the classical linear regression model, OLS, its assumptions, testing and functional forms
(ii) the k-variable linear regression model, testing coefficients and ANOVA, and Restricted Least Squares
(iii) treatment of regressions involving qualitative regressors
(iv) the implications, detection and remedies in case of violation of classical assumptions

Learning outcomes

By studying this course, students will be able to:

. · Explain Key econometric concepts.

· Formulate simple econometric models

· Interpret the regression results obtained from software packages.

· Identify the errors in regression models and rectify the same.

· Analyse the suitability of the data for solving the problem at hand

SYLLABUS OF GE-12

UNIT – I: The Classical Linear Regression Model (12 hours)
Types of Data: Time Series, Cross Section and Panel Data. Concept of Population Regression Function and Sample Regression Function, Assumptions of the model, Derivation of Coefficients of Regression in a two-variable model, Estimation of the SRF using OLS, Analysis of variance and R squared.
Expectation and standard errors of the regression coefficients and the error term. Gauss Markov Theorem. Interval estimation and tests on population regression coefficients, variance of population disturbance term and forecasts. Testing the significance of the model as a whole. Testing the normality assumption.
Extensions of the Two Variable Linear Regression Model: Regressions through the origin, Scaling of Variables and Regression on Standardized Variables. Functional forms of Linear Regression Models: The double log, semi-log, reciprocal, log- reciprocal models with applications.

Unit 2: Multiple Regression Model (15 hours)

Coefficients of regression in a multi variable model and their properties. Interval estimation, tests on population regression coefficients and model significance. Correlations, Goodness of fit and the Adjusted R square. Hypothesis testing for significance of the contribution of a variable, structural stability, restricted least squares.

Unit 3: Dummy Variable Regression Models (6 hours)

Intercept, Slope Dummy variables. Interaction between qualitative variables.Interaction between quantitative and qualitative variables.Use of dummy variables in testing for structural change and for seasonal indices.

Unit 4: Relaxing the Assumptions (12 hours)
Introduction to multicollinearity, heteroscedasticity, autocorrelation and specification errors.The nature of the problem, its detection and corrective measures.
Practical Component (30 hours) **:** Practicals to be based on an econometric software (e.g. Gretl/SPSS/Stata/Eviews/PSPP). The student is expected to implement using the software all the regressions and tests noted in the syllabus.

Essential/recommended readings

1 Gujarati, D. and Sangeetha, N. (2007) Basic Econometrics. Fourth Edition, Tata McGraw-Hill, New Delhi

2. Dougherty, Christopher. (2011). "Introduction to Econometrics," Oxford University Press,

3. Wooldridge, J. M. (2006). Introductory econometrics: A modern approach. Mason, OH: Thomson/South-Western.

4. Manual of the relevant software

Suggestive readings

1. Asteriou, D., & Hall, S.G. (2011). Applied econometrics. Palgrave Macmillan.

2. Brooks, Chris (2008). Introductory Econometrics for Finance (2nd edition). Cambridge University Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (Hons) BUSINESS ECONOMICS

Courses Offered Bythe Department Of Finance And Business Economics,
Faculty Of Applied Social Sciences And Humanities

Category I

Business Economics Course for Undergraduate Programme of study with Business Economics as a Single Core Discipline

(B.A. Honours in Business Economics)

DISCIPLINE SPECIFIC CORE COURSES

Code	Semester	Course Name	Credits	Instruction	Page
DSC – 19	VII	Data Science	4	2L + 2P	

DISCIPLINE SPECIFIC ELECTIVE COURSES

Code	Semester	Course Name	Credits	Instruction	Page
DSE - 1	Odd	Income Tax Law and Practice (already passed)	4	3L+1T	
DSE - 3	Odd	Entrepreneurship (already passed)	4	3L+1T	
DSE - 5	Odd	Investment and Portfolio Optimization (already passed)	4	3L+1T	
DSE - 7	Odd	Monetary Economics (already passed)	4	3L+1T	
DSE - 9	Odd	International Economics (already passed)	4	3L+1T	
DSE - 11	Odd	Understanding Consumers (already passed)	4	3L+1T	
DSE - 12	Odd	Research Methodology (already passed)	4	3L + 1P	
DSE - 13	Odd	Behavioural Finance	4	3L+1T	
DSE – 15	Odd	Development Economics	4	3L+1T	
DSE – 17	Odd	Brand Management	4	3L+1T	
DSE – 19	Odd	Business Valuation	4	3L+1T	
DSE - 21	Odd	Applied Econometrics	4	3L+1P	

GENERIC ELECTIVE COURSES

Code	Semester	Course Name	Credits	Instruction	Page

GE-1	Odd	Principles of Microeconomics (already passed)	4	3L+1T	
GE-3	Odd	Legal Environment of Business (already passed)	4	3L+1T	
GE-5	Odd	Quantitative Techniques in Management (already passed)	4	3L+1T	
GE-7	Odd	Economics of Startups (already passed)	4	3L+1T	
GE-9	Odd	International Economics (already passed)	4	3L+1T	
GE-11	Odd	Economic Policy Framework (already passed)	4	3L+1T	

COURSES OFFERED BY DEPARTMENT OF FINANCE AND BUSINESS ECONOMICS, FACULTY OF APPLIED SOCIAL SCIENCES AND HUMANITIES

Category I

Business Economics Course for Undergraduate Programme of study with Business Economics as a Single Core Discipline

(B.A. Honours in Business Economics)

DISCIPLINE SPECIFIC CORE COURSES

Code	Semester	Course Name	Credits	Instruction	Page
DSC - 20	VIII	Time Series Econometrics	4	3L + 1P	

DISCIPLINE SPECIFIC ELECTIVE COURSES

Code	Semester	Course Name	Credits	Instruction	Page
DSE - 2	Even	Public Finance (Already Passed)	4	3L+1T	
DSE - 4	Even	Advertising Management (Already Passed)	4	3L+1T	
DSE - 6	Even	International Financial Management (Already Passed)	4	3L+1T	
DSE - 8	Even	Behavioural Economics (Already Passed)	4	3L+1T	
DSE - 10	Even	Indian Economy (Already Passed)	4	3L+1T	
DSE - 14	Even	Financial Risk Management	4	3L+1T	
DSE - 16	Even	Marketing Analytics	4	3L+1P	
DSE - 18	Even	Business Tax Planning	4	3L+1T	
DSE - 20	Even	Strategic Management	4	3L+1T	

GENERIC ELECTIVE COURSES

Code	Semester	Course Name	Credits	Instruction	Page
GE-2	Even	Introduction to Digital Marketing (Already Passed)	4	3L+1T	

GE-4	Even	Statistics for Business (Already Passed)	4	3L+1P	
GE-6	Even	Introduction to Finance (Already Passed)	4	3L+1T	
GE-8	Even	Environmental Economics and Climate Change (Already Passed)	4	3L+1T	
GE-10	Even	Indian Financial System (Already Passed)	4	3L+1T	
GE-12	Even	Basic Econometrics (Already Passed)	4	3L+1P	
GE-13	Even	Principles of Macroeconomics (Already Passed)	4	3L+1T	

UNIVERSITY OF DELHI

CNC-II/093/1(23)/2022-23/
Dated: 28.03.2023

N O T I F I C A T I O N

Sub: Amendment to Ordinance V

[E.C Resolution No. 18-1/(18-1-21), 38-1/ (38-1-16) & 60-1/ (60-1-12) dated 18.08.2022, 08.12.2022 & 03.02.2023 respectively]

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:
Skill Enhancement Courses (SECs)
Under
UGCF-2022
Listed under Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University
(with effect from Academic Year 2022-23)

A student who pursues any undergraduate programme in the University and its Colleges is offered a pool of Skill Enhancement Courses. A list of such courses as passed by the Executive Council in its meetings dated 18.08.2022, 08.12.2022 and 03.02.2023 are listed below:

Course	**Serial no**
Beginners Course to Calligraphy	1
Communication in Everyday Life	2
Communication in Professional Life	3
Creative writing	4
Business Communication	5
Introduction to Arabic Calligraphy	6
Negotiation and Leadership	7
PERSONALITY DEVELOPMENT ANDCOMMUNICATION	8
POLITICAL COMMUNICATION AND LEADERSHIP	9
Public Speaking in English Language and Leadership	10
Patkatha Lekhan	11
Rangmanch	12
Rachnatmak Lekhan	13
Anuvad Kala	14
Srijnatmak Lekhan	15
IT Skills and Data Analysis – I	16
IT Skills and Data Analysis- II	17
Basic IT tools	18
Advanced Spreadsheet Tools	19
Statistical Software Package	20
Financial Database and Analysis Software	21
Statistics with ‘R’	22

R Programming for Business Analytics	23
Essentials of Python	24
Analytics with Python	25
Business Intelligence and Data Visualisation	26
Digital Marketing	27
Social Media Marketing	28
Digital Film Production	29
VISUAL COMMUNICATION AND PHOTOGRAPHY	30
CAD for Fashion	31
Graphics Design & Animation	32
Programming using Python	33
Document Preparation & Presentation Software	34
Front End Web Design and Development	35
Back-End Web Development	36
APP Development using Flutter	37
Big Data Analytics-I	38
Big Data Analytics-II	39
Introduction to Blockchain	40
Introduction to Cloud Computing (AWS)	41
Biofertilizers	42
Bioinoculants for Agriculture and Sustainable Development	43
Organic Farming	44
Horticulture	45
Floriculture	46
Hydroponic and Aeroponic Farming	47
Green Belt Development for Smart Cities	48
Nursery Gardening and Landscaping	49
Mushroom Culture and Technology-I	50
Mushroom Culture and Technology – II	51
Plant Aromatics and Perfumery	52
Viewing and Capturing Diversity in Nature	53
Apiculture	54
Formulation of Fish Feed	55
Fish Breeding and Larviculture	56
Ornamental Fish Culture: Opportunity and Scope	57
Bio-floc Technology	58
Aquaculture Entrepreneurship	59
Pearl Culture	60
Sericulture-I: Mulberry Silkworm Rearing	61
Sericulture-II: Eri Silkworm Rearing	62
Sericulture-III: Silk Technology	63
Sericulture-IV: Application of Sericulture in Therapeutic andCosmetic Industry	64
Chemistry Lab Operations and Safety Measures	65
Basic Analytical Techniques	66
Lab Testing and Quality Assurance	67
Essential Food Nutrients	68

Chemistry of Food Flavors and Colourants	69
Chemistry of Cosmetics and Hygiene Products	70
Green Methods in Chemistry	71
Forensic Chemistry	72
Environmental impact and Risk Assessment	73
Sustainably Reporting	74
Environmental Auditing	75
PROSPECTING E-WASTE FOR SUSTAINABILITY	76
Developing SUSTAINABILITY PLANS FOR A BUSINESS	77
PCB Designing and Fabrication	78
Electronic Product Testing	79
Radiation Safety	80
Healthy and Sustainable Food Choices	81
Chocolate Crafts	82
Pasta and Patisserie Technology	83
Frozen Dessert Technology	84
Early Child Care and Education Settings	85
Image Styling	86
Content development and Media for Children	87
Small Scale Catering	88
Culinary Science	89
Dairy Processing	90
Fruits and Vegetable Processing	91
Minimal Food Processing	92
Food Waste and By-Product Utilisation	93
Indian Snack Industry	94
SUSTAINABLE ECOTOURISM AND ENTREPRENEURSHI	95
E Tourism	96
Design Thinking	97
Innovation and Entrepreneurship	98
Museum and Museology	99
Reading the Archive	100
Working with People	101
Life Skill Education	102
Participatory Learning and Action	103
Programme Media	104
Finance for Everyone	105
Personal Financial Planning	106
Yoga in Practice	107
Cyber SPHERE AND SECURITY GLOBAL CONCERNS	108
Harmonium	109

Beginners Course to Calligraphy

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Beginners Course to Calligraphy	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

- To teach students the art of Calligraphy.
- To make students better at handwriting and embellish the scripts.
- To help the students communicate with creativity.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- Students will be skilled in calligraphy scripts.
- Learning flourishing will help to develop good writing.
- Practice sessions will further a project at the end of semester.
- Will induce skills to set up a business, too.

SYLLABUS

Course Contents:

Unit 1: Introduction to Calligraphy **(10 hours)**

- Definition, History of calligraphy, Calligraphy at the Global level, Types of Calligraphy: Classical Calligraphy & Modern Calligraphy
- Practice Sessions: Introducing students to Calligraphy and its types through images, videos and animations.

Unit 2: Introduction to the Writing tools **(20 hours)**

- Tool Kit, Different Types of Pens, Different Types of Nibs, Different Types of Brushes, Different Types of Inks
- Practice Sessions: Display of Writing items, Discussion on the usage of different types of pens, nibs and brushes through hands-on activities

Unit 3: Foundation to Calligraphy **(30 hours)**

- How to write letters?, Majuscules, Miniscules, Numbers, Learning Strokes, Sans Serif B- point, Celtic, Italian Script, Roman Script, Gothic Script
- Practice Sessions: Learning and practicing strokes- Upstroke, Downstroke, Overturn, Underturn, Compound curve, Oval, Ascending loop
- Hands-on activities and Assessment on Sans Serif B-point, Celtic, Italian Script, Roman Script, Gothic Script, Flourishing

Essential/recommended readings

- Suepsuan, P. A. (2021). Start Calligraphy The Right way to write: Learn Calligraphy The Complete Book - Modern Calligraphy Pen For Beginners, Learning Resources Step By Step Number Line, Mastering Modern Calligraphy. Independently published.
- C., & Co., T. P. (2020). Modern Calligraphy Set for Beginners: A Creative Craft Kit for Adults featuring Hand Lettering 101 Book, Brush Pens, Calligraphy Pens, and More. Paige Tate & Co.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Communication in Everyday Life

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Communication in Everyday Life	2	0	0	2	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To lay down a basic foundation for basic communication that is a part of a student's everyday life.
- To inculcate the fundamentals of communication with the aim to enhance listening, speaking and writing skills.
- To hone practical skills that can be used in day-to-day affairs.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to improve mediation skills.
- After studying this course, students will be able to building human relationships.
- After studying this course, students will be able to foster societal understanding & develop an independent perspective.
- After studying this course, students will be able to enhance social communication skills of students.

SYLLABUS

Course Contents:

UNIT 1 **(8 hours)**

Theory of Communication

- Meaning, Features, Uses, Cycle, Feedback, Advantages
- Barriers
- 7 C's of Communication

UNIT 2 **(14 hours)**

Listening Skills

- Netiquettes
- Audio-book Listening & Discussions
- Note-taking

UNIT 3 **(14 hours)**

Speaking Skills

- Oral Presentation- Audio-Visual aids, Audience & Feedback, Delivery of Presentation, Handling Questions
- Group Discussion- Culture & History, Current Affairs, Society-related
- Public Speaking- Public Speech, Extempore

- Interview- Personal, Conversational, Public

UNIT 4 **(8 hours)**

Reading Skills

- Close Reading
- Skimming
- Scanning

UNIT 5 **(16 hours)**

Writing Skills

- Summarising
- Paraphrasing
- Note-making
- Essays- Expository Essay, Descriptive Essay, Narrative Essay
- Letter Writing- Formal Letter, Informal Letter
- Reports- Incidence, Newspaper, Organisational Report
- Analysis & Interpretation- Textual
- Intra & Inter-personal Skills - Monologue, Dialogue

Suggested Readings

- Chaudhary, Shoma. "Understanding Interviews, Billy Elliot is my Story, Only Less Happy". Tehelka: The People's Paper, 18 February 2006.
- Kumar, Dinesh. "Understanding Values, Our Muddled Generation". The Hindu, 26 March 2006.
- Learning to Write I, "Free Writing". In Fluency in English II, ed. Varma, Pramodini and Mukti Sanyal, pp. 1-5, Oxford, New Delhi, 2015.
- Learning to Write II, "Editing". In Fluency in English II, ed. Varma, Pramodini and Mukti Sanyal, pp. 25-27, Oxford, New Delhi, 2015.
- Learning to Write III, "What makes Good Writing Good". In Fluency in English II, ed. Varma, Pramodini and Mukti Sanyal, pp. 48-51, Oxford, New Delhi, 2015.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Communication in Professional Life

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Communication in Professional Life	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

- To prepare the students for their upcoming professional fields.
- To inculcate the fundamentals of professional and business communication.
- To learn aspects of global communication.
- To enhance employability skills of the learners by enabling them to write effective resumes and face interviews with confidence

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to improve presentation skills to be learnt by effective use of verbal and non-verbal communication for the professional field.
- After studying this course, students will be able to acquire practical employability skills to be disseminated through focussed sessions on practical employable knowledge.
- After studying this course, students will be able to enhance professional communication.
- After studying this course, students will be able to improve persuasion and negotiation skills which will be useful for the professional field.

SYLLABUS

Course Contents:

UNIT 1 **(8 hours)**

- Theory of Business Communication
- Introduction
- What is Business Communication?
- Language of Business Communication
- Cultural Components – Cross-Cultural Communication, Cultural Shock, Stereotyping, Ethnocentrism
- Miscommunication & Effective Communication

UNIT 2 **(14 hours)**

Listening Skills

- Netiquettes
- Audio-book Listening & Discussions
- Note-taking

UNIT 3 **(18 hours)**

Speaking Skills

- Presentation Skills- Oral Presentation, Ppt. Preparation, Ppt. Presentation
- Group Discussion
- Talks- Domain-specific, Ted-Talks, Business Meets, Motivational Talks
- Telephonic Skills
- Persuasion Skills
- Meeting & Negotiation
- Interview- Promotion Interview, Job Interview, Business Interview
- Functions and activities of PR

UNIT 4 **(20 hours)**

Writing Skills

- Summarising & Paraphrasing
- Job-Oriented Skills- CV, Resume & Bio- Data, Job Application Letter
- Documentation
- Advertisements & Invitation
- Letter Writing- Applications, Business Letters
- Report- Analytical Report, Project Report
- Digital Communication in Social Space- Social Media Posts (Twitter, Facebook), Blog Writing, Review Writing
- Advertisement/Invitation/Poster Designing- Canva/MS Word/Coral
- Memo, Office Order, Minutes
- Making Online Academic/Work Profile- LinkedIn

Suggested Readings

- Kaushik, J.C. and K.K. Sinha eds., English for Students of Commerce, Oxford University Press, New Delhi.
- Sethi, Anjana & Bhavana Adhikari, Business Communication, Tata McGraw Hill.
- Anjana Neira Dev, et.al, eds. Business English, Department of English, University

of Delhi, 2011, Pearson Publications, New Delhi.

Examination scheme and mode:
Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Creative Writing

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Creative Writing	2	0	0	2	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To build creative writing skills of students in the main modes of creative writing viz poetry, fiction (novel, short stories), non-fiction (life narratives, autobiographies and biographies) and drama.
- To inculcate practical skills in students by mapping their creative talent which be beneficial for employability too.
- To perform hands-on-activities to students to develop their creative skills through practical sessions.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to be sensitive to the texture of literary language.
- After studying this course, students will be able to develop craft in creative writing.
- After studying this course, students will be able to develop sense of expressing themselves through poetry/short story/biography.
- After studying this course, students will be able to induce an understanding of the relationship between an individual and society.
- After studying this course, students will be able to get into different fields and pursue versatile career opportunities.
- After studying this course, students will be able to develop an understanding of theatre and performance through drama will also help them to develop observatory and behavioural skills.
- After studying this course, students will be able to develop a critical thought process and a knack in putting it in words. Students may also utilise the learnings of proofreading and editing for their academic and professional growth.
- After studying this course, students will be able to go for publishing their own work.

- After studying this course, students will be able to write a book and submit to professional bodies & academic organisations.

SYLLABUS

Course Contents:

UNIT 1 **(18 hours)**

- Introduction to Creative Writing- Meaning, Importance

- Imagination & Writing- Peer-interaction, Activities on Imagination
- Tropes, Motifs and Figures- Learning tropes, motifs and figures through videos, Discussion on the findings
- Craft of Writing- Figure of Speech, Word Play, Character Creation
- Character Creation- Dialogue Enaction, Learning Characters through discussion on famous writings, Character Analysis, Writing activities on creating different types of characters (gender/social background/ethnicity etc.)

UNIT 2 **(18 hours)**

- Close Reading
- Analysis and Interpretation- Reading different works in Literature, Discussion in small groups, Practice Writing Session
- Proofreading & Editing- Practice sessions on Proofreading & Editing of different typesof writing

UNIT 3 **(24 hours)**

- Steps of Creative Writing- Pre-Writing, Writing, Post-Writing/Final Draft
- Types of Creative Writing- Poetry, Fiction, Non-Fiction (Life Narratives), Drama
- Creative Writing & Media- Film Review, Book Review, Other Writings in Media, Submission, Publication
- Learning to write Poetry- Reading & understanding Poetry; Practising tone, rhyme, metre, verses; Writing sessions
- Learning to write Fiction- Reading & understanding Fiction; Practicing different elements of fiction (Short story, Novella, Novel); Writing sessions
- Learning to write Non-Fiction- Reading & understanding Non-Fiction (Biographies & Autobiographies); Practicing different elements of non-fiction; Writing sessions
- Learning to write Drama- Reading & understanding Drama; Practicing different elements (plot, character, climax, verbal & non-verbal cues) of Drama; Writing sessions
- Submission & Publication (in Print & Digital) - Discussions over how & where to submit and publish (online/offline), Hands-on activities

Suggested Readings

- *Creative Writing: A Beginners' Manual* by Anjana Neira Dev et al. for The Department of English, University of Delhi (New Delhi: Pearson, 2008).

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Business Communication

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Business Communication	2	1	0	1	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To train students to enhance written as well as oral communication in the corporate world.
- To help students in understanding the principles and techniques of business communication.
- To understand the use of electronic media for communication.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to explain the need for communication in management.
- After studying this course, students will be able to appreciate the need of effective writing for communication.
- After studying this course, students will be able to demonstrate the skill of effective report writing and summarizing annual reports.
- After studying this course, students will be able to analyse business correspondence and e-correspondence.
- After studying this course, students will be able to appreciate oral presentations.

SYLLABUS

Course Contents:

Unit 1: Introduction to the essentials of Business Communication (9 hours)

Meaning, process and functions. Need and importance. Medium: verbal & non-verbal communication. Channels: formal & informal. Levels of communication. Direction of communication: downward, upward, lateral, & diagonal. Effective communication: difficulties/barriers and solutions. Interactive and non-interactive techniques of communication. Listening as a tool of communication, Guidelines for effective listening.

Unit 2: Effective Writing (9 hours)

Guidelines for clear writing. References, bibliographical research tools. Citing methods, footnotes, discussion footnotes. Use of library and internet for collection, classification and interpretation of data and information.

Unit 3: Report Writing (9 hours)

Types of reports. Formal report: components and purpose. Organising information: outlining

& numbering sections, section headings, sub-headings, & presentation. Writing reports on field work/visits to industries, business concerns. Summarising annual reports of companies: purpose, structure and principles. Drafting minutes.

Unit 4: Business Correspondence and E-Correspondence (9 hours)

Need and importance of business letters. Office memorandum, office circulars, notices and orders. Technology for communication. Effective IT communication tools. Electronic mail: advantages, safety and smartness in email. E-mail etiquettes.

Unit 5: Spoken English and Oral Presentation (9 hours)

Effective negotiation: elements, process and general guidelines. Telephonic conversation. Conducting & facing interviews. Conducting & participating in group decisions. Making presentations: content and organising. Features of a good presentation. Delivering a presentation.

Practical Exercises:

The learners are required to:

- learn how to summarise annual reports of companies.
- prepare presentations using power-point.
- participate in Group discussions and mock interviews.
- smartly draft business emails.

Essential/recommended readings

- C.B.Gupta (2019). Essentials of Business Communication, Sultan Chand & Sons.
- Kaul, A. Effective Business Communication, 2nd ed. PHI learning
- Lesikar, R.V. & Flatley, M.E. (2001). Basic Business Communication Skills for Empowering the Internet Generation, Tata McGraw Hill Publishing Company Ltd. New Delhi.
- Ludlow, R. & Panton, F.(1992). The Essence of Effective Communications, Prentice Hall of India Pvt. Ltd., New Delhi.
- Meyer C,Dev(2021). Communicating for Results,Oxford University Press
- Quintanilla, Kelly M, (2021), Business and Professional Communication, 4e, Sage Textbook
- R. C. Bhatia (2008), Business Communication, Ane Books Pvt Ltd, New Delhi.
- Raman and Singh(2012). Business Communication. Oxford University Press
- Scot, O., Contemporary Business Communication. Biztantra, New Delhi.

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Introduction to Arabic Calligraphy

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Arabic Calligraphy	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Course Objectives:	**Course Learning Outcomes:**
1. To make the learners familiar with Arabic Calligraphy. 2. To make them aware of different Arabic scripts.	The student will be able to: 1. Know about the history of Arabic Calligraphy. 2. Read and write Arabic letters and text. 3. Recognize different Arabic scripts/fonts. 4. Write in two Arabic scripts: Naskh and Ruq'ah.
Unit 1 (20 hours) - Calligraphy - Arabic Calligraphy -Origin and Development of Arabic Calligraphy -Lesson on Arabic Alphabet -Introduction to Arabic script Ruq'ah -Introduction to Arabic script Naskh	**Unit 2 (20 hours)** - Importance and Characteristics of the Arabic Script Ruq'ah in modern time. - Importance and Characteristics of the Arabic Script Naskh in modern time. - Familiarity with different Arabic scripts. - Al-Aqlaam Al-Sittah - Pioneers of the Arabic scripts/calligraphy. • Ibn Muqlah • Ibn Al-Bawwab
Unit 3 (20 hours) -Benefits of Good handwriting -Famous Arabic fonts of computer -Practice of the Arabic scripts: Naskh and Ruq'ah	

Teaching Learning Process

- The teacher will introduce different aspects of Arabic scripts to students.
- The students will practice the prescribed scripts to make their handwriting beautiful.
- The teacher will also use computer to familiarize the students with different Arabic scripts of it.

References:

1. M. Ziauddin: Muslim Calligraphy, Kitab Bhawan, Delhi

.2 عالم خليل مير: خط نور مولانا

ندوة ،سيكس؟ كاو كيو رقعة

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،غزة ،منصور Gمكتبة سمـ ،ارةCومـ حضارة ي6العر ط89ا ،العيد شيخ سليمان يم;إبرا .د .4
. فلسطن

Additional Resources:

1. Muhammad Sohail: Administrative and Cultural History of Islam, New Delhi.

2. خلال ي من6العر ط89ا : سلاميةW والدراسات للبحوث ا لـلك فيصل مركز
السعودية يةالعر ا لـملكة ،طوطاتY8ا.

Examination scheme and mode:
Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Negotiation and Leadership

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Negotiation and Leadership	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the students to the importance of negotiation skills
- To expose the students to diverse contexts and situations that require negotiation skills
- To learn about the management of critical and crisis situations
- To evolve relationship building skills

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to apply negotiation skills to obtain desired results
- After studying this course, students will be able to understand the various aspects of a crisis situation for appropriate management.
- After studying this course, students will be able to learn how to manage complex negotiation situations.
- After studying this course, students will be able to understand the process of relationship building.
- After studying this course, students will be able to test and judge the legitimacy of the terms of negotiation

SYLLABUS

Course Contents:

Unit 1 **(15 hours)**

Negotiation Fundamentals Key concepts and core vocabulary of negotiation process, deal-making and dispute resolution, Assumptions and biases that are barriers to effective negotiation, Collaborative approaches, risk & opportunities to achieve win-win outcomes

Negotiation Canvas Introduction of a framework for negotiation preparation and how to use it, Elements of negotiation canvas i.e relationship, alternatives, legitimacy, options, interests among others, Difference between position and interests

Unit 2 **(15 hours)**

Managing critical moments

Types of negotiation approaches used by negotiators Critical moments that can make or break the deal How to identify these critical moments, Strategies to manage critical moments in the negotiation

Effective Communication and Relationship Building
Role of communication and relationship in negotiation, Understanding the other party's psychology to understand their interests, build trust and improve the scope of the negotiation, Unconditionally constructive behaviours, Methods of building trust, and empathy, Overcoming communication barriers, difficult behaviours and information asymmetry

Unit 3 **(15 hours)**

Discovering, creating and claiming value
Methods of value discovery during negotiation, How is value divided and claimed between the negotiating parties?, What are the tradeoffs, mutual gains and contingencies?, Concept of distributive bargaining, equitable solutions, and ZOPA (zone of possible agreement),Biases and enemies of value creation

Complex Negotiations
Strategies for negotiations are not straightforward, involve several issues, include multiple stakeholders, and /or involve powerful parties, Hofstede's Culture dimensions, Dealing with people with difficult behaviours

Unit 4 **(15 hours)**
Managing Alternatives

Concept of BATNA (Best Alternative to Negotiated Agreement), Methods to evaluate alternative options/offers, Management of one's alternatives and other party's alternatives during negotiation.

Legitimacy and Building Commitment
When to say yes to agreed terms, and when to walk away, Criteria for decision-making on negotiated terms, Assessment of the legitimacy of negotiated terms, Leading all parties to commit to the negotiated agreement, Steps from plan to execution

Essential/Recommended Readings

- Getting to Yes: Negotiating Agreement Without Giving in by Roger Fisher, William L. Ury, and Bruce Patton. Penguin Books
- Difficult Conversations: How to Discuss What Matters Most by Douglas Stone, Bruce Patton, Sheila Heen. Penguin Books
- Value Negotiation: How to Finally Get the Win-Win Right by Horacio Falcão. Pearson Education

Articles

- The Seven Myths of Win-Win Negotiations, by Horacio Falcão
- Control the Negotiation before it begins by Deepak Malhotra

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Personality Development and Communication

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Personality Development and Communication	**2**	**1**	**0**	**1**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop inter personal and effective communication skills.
- To develop problem solving skills and understand its influence on behaviour and attitudes of individuals.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the importance of oral and written communication in day-to-day working of the organisation.
- After studying this course, students will be able to develop inter personal skills and problem-solving skills.
- After studying this course, students will be able to understand the role of body language in effective communication.

SYLLABUS

Course Contents:

Unit 1 **(12 hours)**

Introduction, need for Communication, Process of Communication, Written and Verbal Communication, Visual communication, Signs, Signals and Symbols, Silence as a Mode of Communication, Inter-cultural, Intra-cultural, Cross-cultural and International communication, Communication through Questionnaires, Business Letter Writing, Electronic Communication.

Unit 2 **(12 hours)**

Business Cases and Presentations, Letters within the Organizations, Letters from Top Management, Circulars and Memos, Business Presentations to Customers and other stakeholders, presenting a Positive Image through Verbal and Non-verbal Cues, Preparing and Delivering the Presentations, Use of Audio-visual Aids, Report Writing.

Unit 3 **(12 hours)**

Barriers to Communication, Improving Communication Skills, Preparation of Promotional Material, Non-verbal communication, Body language, Postures and gestures, Value of time, Organizational body language, Importance of Listening, Emotional Intelligence. Working individually and in a team, Leadership skills, Leadership Lessons, Team work and Team building, Feedback, Feed forward Interpersonal skills – Delegation, Humour, Trust, Expectations, Values, Status, Compatibility and their role inbuilding team – work Conflict Management – Types of conflicts, how to cope with conflict.

Unit 4 **(9 hours)**

Negotiation Skills, Types of Negotiation, Negotiation Strategies, Selling skills – Selling to customers, Selling to Superiors Selling to peer groups, team mates and subordinates, Conceptual selling, Strategic selling, Selling skills – Body language.

Essential/recommended readings

- Kushal Jin – Business Communication, VK India.
- Krishnamacharyulu, C. S. G, Ramakrishnan Lalitha – Personality Development, Interpersonal Skills and Career Management, Himalaya Publishing.
- Corvette Budjac – Conflict Management: A Practical Guide to Developing NegotiationStrategies, Pearson.

Suggestive Readings

- Mitra, B. K., Personality Development and Soft Skills, Oxford University Press.
- Kumar Sanjay and Pushplata, Communication Skills, Oxford University Press.
- Mandal S. K., Effective Communication and Public Speaking, Jaico Publishing.

Note: Latest edition of the readings may be used

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Political Leadership and Communication

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Political Leadership and Communication	**2**	**1**	**0**	**1**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the cross-cutting multi-disciplinary linkage of the subject.
- To gain a basic understanding of specific concepts and critical review of political communication and election campaign studies.
- To be able to construct a linkage between political communication and leadership.
- To learn conceptual frameworks and qualitative research skills for the analysis of modes and techniques of political communication and leadership.

Learning outcomes

The Learning Outcome of this course is as follows:

- After studying this course, students will be able to have a professional/career-oriented insight by facilitating their journey as Media managers, policy makers, political analysts, Journalists, Public relations officers in government agencies, political parties and higher education.

SYLLABUS OF SEC-7

Unit I: Explaining Political Communication **(9 hours)**

- Meaning, Nature and Scope
- Evolution and Transformation

Unit II: Exploring Leadership **(9 hours)**

- Themes, Theories and Typologies
- Participation and Performance

Unit III: Expanding Political Communication and Leadership: Orientation and Action (9 hours)

- Developing Communication and Leadership through Research
- Strengthening Techniques of Communication and Leadership

Unit IV: Extending Political Communication and Leadership: Research Issues and Challenges (9 hours)

- Researching Communication and Leadership through Survey: Opinion Poll, Exit Poll.
- Examining Contemporary Issues and Challenges in Communication and Leadership

Unit V: Executing Political Communication and Leadership: Empirical and Professional Implications (9 hours)

- Psephology as an Art and Vocation
- Exploring Career Options

Essential/recommended Readings:

- Pole (2009). Blogging the Political: Politics and Participation in a networked
- Society. New York: Routledge.
- D. A. Graber (2005). 'Political Communication Faces the 21st Century', Journal of
- Communication, September: 479-507.
- Frank Esser and Barbara Pfetsh (eds.). (2004). Comparing Political Communication-Theories, Cases and Challenges. Cambridge: Cambridge University Press.
- G. Gerbner, L. Gross, M. Morgan and N. Signorielli (1982). 'Charting the Mainstream: Television's Contribution to Political Orientations', Journal of
- Communication, 32(2): 100-27.
- H. A. Semetko and M. Scammell (eds.) (2012). The SAGE Handbook of Political Communication. London: Sage.
- John C Maxwell (2008). Developing the Leader Within You. New Delhi: Harper Collins.
- Kiran Prasad (ed.) (2003). Political Communication: The Indian Experience. New
- Delhi: B.R. Publishers.
- Max Depree (2004). Leadership is an Art. RHUS Publications.
- Yogesh Atal (2014). 'Matdataoin Ka Sansar', Pratiman, Vol.2, No.1.
- Yogesh Atal (2018). 'Chunav Shastra Aur Rajniti', Pratiman, No.11.

Web Source

- http://www.politicalcommunication.org/history.html

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Public Speaking in English Language and Leadership

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Public Speaking in English and Leadership	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

- To impart leadership skills to students along with adequate communication skills to curate strong leaders in the emerging social, political and corporate world.
- To create leaders with ethics and resilience in industry based fields as well as social fields.
- To allow students to realise their leadership skills and curate them through a hand-on practical approach which will be helpful in generating employable skills for them.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to learn effective communication through Public Speaking will instil leadership development among students.
- After studying this course, students will be able to to lead in different fields at the undergraduate level, be responsible citizens and employ leadership skills in their future endeavours, too.
- After studying this course, students will be able to strengthen their critical mindset, help them being assertive and put forward constructive viewpoints employing the skills learnt in the practice sessions.

SYLLABUS

Course Contents:

UNIT 1 **(8 hours)**

- Introduction to Effective Communication- Features, Advantages & Disadvantages
- Importance of Listening
- Oral communication- Meaning, Features & Importance
- Reading Public Speech- Reading documented speeches delivered in the past; Understanding the art of word play, vocabulary and putting thoughts into words

UNIT 2 **(18 hours)**

- Public Speaking-
  - What is Speech?, Overcoming Fear of Public Speaking, Language of Public Speech
  - Drafting a Public Speech (Reading, research, writing, Fact check, Re-writing, Delivery)
  - 3P's of Public Speaking (Preparation, Practice, Performance)
  - Rhetoric Skills, Art of Informative & Persuasive speaking, Concluding Speech with Power
- Types of Public Speaking-
  - Physical & Online
  - Political, Organisational, Educational & Motivational
  - Ted Talks, Public Speaking in Media
- Listening in groups and Discussion- Listening famous speeches (from history &everyday life); Analysis of its elements & classroom discussion
- Writing Public speech- Classroom Practice Sessions

UNIT 3 **(18 hours)**

- Leadership Skills- (2 hrs.)
  - Meaning, Features & Importance
  - Historical Overview
  - Leadership in Academic Life, Corporate Space, Public Life, Social Leadership and Political Leadership
- Leadership & Innovations- (2 hrs.)
  - Audience analysis
  - Audience Engagement & Leadership
  - Influencing through Leadership
- Execution & Delivery of Public Speech- Learning rhetorics through speeches in the form of Audio/ Video; Learning Body Language & Paralanguage through ICT
- Developing leadership competence through Public Speaking- Intra-class Speech Competitions; Extempore; Group Discussion

UNIT 4 **(16 hours)**

- Importance of Public Speaking in developing Leadership Skills
- Ethics in Public Speaking & Leadership
- Mock Parliament/MUNs
- Workshop

Suggested Readings:

- Beebe, S. A., & Beebe, S. J. (2012). Public speaking: An audience-centred approach. (8th ed.). Boston: Pearson.
- Cardon, P. (2014). Business communication: Developing leaders for a networked world. (international ed.). New York: McGraw-Hill.
- Jaffe, C. I. (2013). Public speaking: Concepts & skills for a diverse society. (7th ed.). Boston: Cengage Learning.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

पटकथा लेखन

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
पटकथा लेखन	2	0	0	2	12th Pass	NIL

Course Objective:

- पटकथा लेखन का परिचय कराना।
- विद्यार्थी की लेखन-क्षमता और भाषा-कौशल को बढ़ावा देना।
- विद्यार्थी को लेखन में रोजगार सम्बन्धी क्षेत्रों के लिए तैयार करना।

Course Learning Outcomes:

- पटकथा लेखन तथा उसके तकनीकी शब्दों से विद्यार्थी अवगत हो सकेगा।
- पटकथा लेखन की जानकारी मिलने के उपरान्त विद्यार्थी के लिए रोजगार की संभावनाएँ बनेंगी।
- विद्यार्थी भाषायी सम्प्रेषण को समझते हुए लेखन से सम्बन्धित विभिन्न पक्षों से अवगत हो सकेगा।
- विद्यार्थी में अभिव्यक्ति कौशल का विकास हो सकेगा।

SYLLABUS

यूनिट 1 (4 सप्ताह)

- पटकथा लेखन: परिचय
- पटकथा के तत्व
- पटकथा के प्रकार
- पटकथा की शब्दावली

यूनिट 2 (4 सप्ताह)

- पटकथा लेखन में शोध का महत्व
- चरित्र की निर्मिति और विकास
- एक दृश्य का लिखा जाना
- तीन अंक (थ्री एक्ट) और पाँच अंक (फाइव एक्ट) को समझना

यूनिट 3 (4 सप्ताह)

- वेबसीरीज के लिए पटकथा लेखन
- लघु फ़िल्म के लिए पटकथा लेखन
- वृत्तचित्र के लिए पटकथा लेखन
- विज्ञापन फ़िल्म के लिए पटकथा लेखन

यूनिट 4 (3 सप्ताह)

- पटकथा का पाठ और विश्लेषण
- किसी आईडिया को स्क्रीन प्ले के तौर पर विकसित करना

सन्दर्भ पुस्तकें:

- पटकथा कैसे लिखें: राजेंद्र पांडेय - वाणी प्रकाशन, दिल्ली, संस्करण 2015
- पटकथा लेखन : एक परिचय - मनोहर श्याम जोशी - राजकमल प्रकाशन, दिल्ली संस्करण 2000
- कथा-पटकथा: मन्नू भंडारी - वाणी प्रकाशन, दिल्ली, संस्करण 2014
- व्यावहारिक निर्देशिका: पटकथा लेखन: असग़र वज़ाहत - राजकमल प्रकाशन, दिल्ली संस्करण 2011
- आईडिया से परदे तक: रामकुमार सिंह - राजकमल प्रकाशन, दिल्ली संस्करण 2021

Examination Scheme & Mode:

Total Marks: 100
Internal Assessment: 25 marks
Practical Exam (Internal): 25 marks
End Semester University Exam: 50 marks
The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: **Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

रंगमंच

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
रंगमंच	2	0	0	2	12th pass	NIL

Course Objective:

- हिन्दी रंगमंच का सामान्य परिचय कराना ।
- नाट्य-प्रस्तुति की प्रक्रिया की जानकारी देना ।
- अभिनय के विभिन्न पक्षों से अवगत कराना ।
- रंगमंच के खेलों और गतिविधियों से अवगत कराना ।

Course Learning Outcomes:

- नाट्य-प्रस्तुति की प्रक्रिया से विद्यार्थी अवगत हो सकेगा ।
- रंगमंच की सामान्य जानकारी मिलने के उपरान्त इस क्षेत्र में विद्यार्थी के लिए रोजगार की संभावनाएँ बनेंगी ।
- रंगमंचीय गतिविधियों से विद्यार्थी के व्यक्तित्व का विकास हो सकेगा ।
- विद्यार्थी में अभिव्यक्ति कौशल का विकास हो सकेगा ।

SYLLABUS

यूनिट 1 (4 सप्ताह)

- भरत मुनि कृत नाट्यशास्त्र (संक्षिप्त परिचय)
- हिन्दी का पारंपरिक रंगमंच (संक्षिप्त परिचय)

यूनिट 2 (4 सप्ताह)

प्रस्तुति-प्रक्रिया: आलेख का चयन, अभिनेताओं का चयन, दृश्य-परिकल्पना (ध्वनि-संगीत-नृत्य-प्रकाश), पूर्वाभ्यास

यूनिट 3 (4 सप्ताह)

अभिनय की तैयारी: वाचिक, आंगिक, आहार्य, सात्विक

यूनिट 4 (2 सप्ताह)

आशु अभिनय, थिएटर गेम्स, संवाद-वाचन, शारीरिक अभ्यास, सीन वर्क

यूनिट 5 (1 सप्ताह)

मंच प्रबंधन: सेट, रंग-सामग्री, प्रचार-प्रसार, ब्रोशर-निर्माण

सन्दर्भ पुस्तकें:

- संक्षिप्त नाट्यशास्त्रम् - राधावल्लभ त्रिपाठी, वाणी प्रकाशन, दिल्ली, 2009
- रंग स्थापत्य: कुछ टिप्पणियाँ - एच. वी. शर्मा राष्ट्रीय नाट्य विद्यालय प्रकाशन, दिल्ली, 2004
- पारंपरिक भारतीय: रंगमंच अनंतधाराएँ - कपिला वात्स्यायन, अनुवाद - बदी उज़म्मा, नेशनल बुक ट्रस्ट, दिल्ली, 1995
- हिंदी रंगमंच का लोकपक्ष, सं प्रो. रमेश गौतम, स्वराज प्रकाशन, दिल्ली 2020
- मंच आलोकन - जी. एन. दासगुप्ता, अनुवाद - अजय मलकानी, नेशनल बुक ट्रस्ट, दिल्ली, 2006
- रंगमंच के सिद्धांत - सं महेश आनंद, देवेन्द्र राज अंकुर, राजकमल प्रकाशन, दिल्ली 2008

Examination Scheme & Mode:

Total Marks: 100
Internal Assessment: 25 marks
Practical Exam (Internal): 25 marks
End Semester University Exam: 50 marks
The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: **Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

रचनात्मक लेखन

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
रचनात्मक लेखन	2	0	0	2	12th Pass	NIL

Learning Objectives

- विद्यार्थियों के मौखिक और लिखित अभिव्यक्ति कौशल को विकसित करना।
- उनमें कल्पनाशीलता और रचनात्मकता का विकास करना।
- साहित्य की विविध विधाओं और उनकी रचनात्मक शैली का परिचय कराते हुए लेखन की ओर प्रेरित करना।
- प्रिंट एवं इलेक्ट्रानिक माध्यमों के लिए लेखन की प्रवृत्ति को विकसित करना।

Learning outcomes

The Learning Outcomes of this course are as follows:

इस पाठ्यक्रम के अध्ययन के पश्चात् विद्यार्थियों में:

- मौखिक और लिखित अभिव्यक्ति कौशल को विकसित होने में मदद मिलेगी।
- उसमें कल्पनाशीलता और रचनात्मकता का विकास हो सकेगा।
- साहित्य की विविध विधाओं और उनकी रचनात्मकता शैली का परिचय होगा जिससे वे स्वयं भी इन विधाओं में लेखन की अग्रसर हो सकेंगे।

- प्रिंट एवं इलेक्ट्रानिक माध्यमों के लिए लेखन की ओर भी ये अग्रसर होंगे।

SYLLABUS

इकाई 1 (5 सप्ताह)

रचनात्मक लेखन: अवधारणा: स्वरूप आधार एवं विश्लेषण

- भाव एवं विचार की रचना में अभिव्यक्ति की प्रक्रिया
- अभिव्यक्ति के विविध क्षेत्र: साहित्य पत्रकारिता, विज्ञापन, भाषण
- लेखन के विविध रूप: मौखिक-लिखित, गद्य-पद्य, कथात्मक-कथेतर
- अर्थ निर्मिति के आधार: शब्द और अर्थ की मीमांसा शब्द के पुराने-नए प्रयोग, शब्द की व्याकरणिक कोटि

इकाई 2

भाषा भंगिमा और साहित्य लेखन (5 सप्ताह)

- भाषा की भंगिमाएँ: औपचारिक-अनौपचारिक, मौखिक-लिखित, मानक
- भाषिक संदर्भ: क्षेत्रीय, वर्ग-सापेक्ष, समूह-सापेक्ष
- रचना-सौष्ठव: शब्दशक्ति, प्रतीक, बिम्ब, अलंकारवक्रता
- कविता: संवेदना, भाषिक सौष्ठव, छंदबद्ध-छंदमुक्त, लय, गति, तुक
- कथा-साहित्य: वस्तु, पात्र, परिवेश, कथ्य और भाषा

Unit III (5 weeks)

विविध विधाओं एवं सूचना माध्यमों के लिए लेखन

- नाट्य-साहित्य: वस्तु, पात्र, परिवेश, कथ्य, रंगमंच और नाट्य-भाषा
- विविध गद्य विधाएँ: निबंध, संस्मरण, आत्मकथा, व्यंग्य, रिपोर्ताज, यात्रा-वृतांत
- प्रिंट माध्यम के लिए लेखन: फीचर, यात्रा-वृतांत, साक्षात्कार, विज्ञापन

- इलेक्ट्रानिक माध्यम के लिए लेखन: विज्ञापन, पटकथा, संवाद

Practical Exercises if any:

नोट: उपर्युक्त का परिचय देते हुए इनका अभ्यास भी करवाया जाए।

References and suggested Readings

1. साहित्य चिंतन: रचनात्मक आयाम: रघुवंश
2. शैली: रामचंद्र मिश्र
3. रचनात्मक लेखन: सं. रमेश गौतम
4. कविता क्या है: विश्वनाथ प्रसाद तिवारी
5. कथा-पटकथा: मन्नू भंडारी
6. पटकथा लेखन: मनोहर श्याम जोशी
7. कला की जरूरत: अर्नेस्ट फिशर: अनुवादक: रमेश उपाध्याय
8. साहित्य का सौंदर्यशास्त्र: रवींद्रनाथ श्रीवास्तव
9. कविता: रचना-प्रक्रिया: कुमार विमल

Examination scheme and mode:

Total Marks: 100
Internal Assessment: 25 marks
Practical Exam (Internal): 25
marks
End Semester University Exam: 50 marks
The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

ANUVAD KALA
(Art of Translation)
(अनुवाद कला)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
ANUVAD KALA (Art of Translation) (अनुवाद कला)	2	1	0	1	Class 12th pass in any subject	Working Knowledge of the concerned language

Credits: **2** **L/T/P= 1/0/1**

LEARNING OBJECTIVES:

- The course is committed to continue its pioneering work in defining new literary paradigms and fostering new directions for exploration in literary studies, including such areas as the relationship between translation and transnationalism.
- To develop a deeper appreciation of cultural diversity by introducing the technique of translation studies.
- To develop the creativity of the students and enhance their writing skills

LEARNING OUTCOMES:

- Students will have an understanding of major approaches to the study of translation.
- They will be able to identify, analyse, interpret and describe the critical ideas, values, and themes that appear in literary texts and to understand the ways these ideas, values, and themes, inform and impact cultures and societies both in source language and its translated version.
- They will be able to improve their skill of translation.

Unit I: ਅਨੁਵਾਦ ਸਿਧਾਂਤ- अनुवाद सिद्धांत **(Translation Principles)**

(Theory) **(8 Hours)**

- **ਅਨੁਵਾਦ ਦੀ ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਿਰਤੀ ਅਤੇ ਮਹੱਤਵ**

  अनुवाद की परिभाषा, प्रकृति और महत्व

Definition, nature and importance of translation

- **ਅਨੁਵਾਦ ਦੇ ਸੰਦ**: **ਕੋਸ਼**, **ਕੋਸ਼ਾਂ ਦੇ ਵਿਭਿੰਨ ਪ੍ਰਕਾਰ**, **ਪਰਿਭਾਸ਼ਕ ਸ਼ਬਦਾਂ ਦਾ ਗਿਆਨ ਹਾਸਿਲ ਕਰਨਾ**

  अनुवाद उपकरण: शब्दकोश, विभिन्न प्रकार के शब्दकोश, परिभाषिक शब्दों का ज्ञान प्राप्त करना

  Translation tools: Dictionaries, different types of dictionaries, gaining knowledge of defining words

- **ਅਨੁਵਾਦ ਦੇ ਰੂਪ**: **ਮਨੁੱਖੀ ਅਤੇ ਮਸ਼ੀਨੀ**

  अनुवाद के रूप: मानवी और मशीनी

  Forms of translation: human and machine

Unit II: ਅਨੁਵਾਦ ਕਾਰਜ ਨੂੰ ਦਰਪੇਸ਼ ਚੁਣੌਤੀਆਂ-अनुवाद प्रक्रिया में आने वाली चुनौतियाँ **(Challenges to the translation process)**

(Theory) (7 Hours)

- **ਵਿਭਿੰਨ ਖੇਤਰਾਂ ਲਈ ਅਨੁਵਾਦ ਦੇ ਮਸਲੇ** (**ਮੈਡੀਕਲ**, **ਤਕਨਾਲੋਜੀ**, **ਵਿਗਿਆਨ**)

  विभिन्न क्षेत्रों के लिए अनुवाद के मुद्दे (चिकित्सा, प्रौद्योगिकी, विज्ञान)

  Translation issues for various fields (Medical, Technology, Science)

- **ਮਸ਼ੀਨੀ ਅਨੁਵਾਦ ਨਾਲ ਸੰਬੰਧਤ ਮਸਲੇ**

  मशीनी अनुवाद से संबंधित मुद्दे

  Issues related to machine translation

- **ਸਭਿਆਚਾਰਕ ਵਖਰੇਵੇਂ ਕਾਰਨ ਉਪਜੀਆਂ ਚੁਣੌਤੀਆਂ**

  सांस्कृतिक विभिन्नताओं से उत्पन्न चुनौतियाँ

  Challenges arising from cultural differences

Unit III: ਸਾਹਿਤਕ ਅਨੁਵਾਦ: ਹਿੰਦੀ/ਅੰਗਰੇਜ਼ੀ ਤੋਂ ਪੰਜਾਬੀ - साहित्यिक अनुवादः हिंदी/अंग्रेजी से पंजाबी **-Literary Translation: Hindi/English to Punjabi)**

(Practical) (15 Hours)

- **ਕਵਿਤਾ ਦਾ ਅਨੁਵਾਦ ਕਰਨਾ**

  कविता का अनुवाद

  Translating poetry

- **ਕਹਾਣੀ ਦਾ ਅਨੁਵਾਦ ਕਰਨਾ**

  कहानी का अनुवाद

  Translating Short Story

- **ਵਾਰਤਕ ਰਚਨਾ ਦਾ ਅਨੁਵਾਦ ਕਰਨਾ**

  गद्य कृति का अनुवाद

  Translating prose

Unit IV: ਜਨ ਸੰਚਾਰ ਹਿੰਦੀ/ਅੰਗਰੇਜ਼ੀ ਤੋਂ ਪੰਜਾਬੀ- जनसंचार हिंदी/अंग्रेजी से पंजाबी

(Mass Communication Hindi/English to Punjabi)

(Practical) (15 Hours)

- **ਖ਼ਬਰ ਦਾ ਅਨੁਵਾਦ ਕਰਨਾ**

  समाचार का अनुवाद

  Translating news
- **ਇਸ਼ਤਿਹਾਰ ਦਾ ਅਨੁਵਾਦ ਕਰਨਾ**

  विज्ञापनों का अनुवाद

  Translating Advertisement
- **ਨੋਟਿਸ ਦਾ ਅਨੁਵਾਦ ਕਰਨਾ**

  नोटिस का अनुवाद

  Translating Notice

ESSENTIAL READINGS:

- Bhola Nath Tiwari (2018), Anuvad Vigyan, Kitabghar Prakashan, Delhi.
- Bijay Kumar Das (2005), **A Handbook of Translation Studies**, Atlantic Publishers and Distributors Pvt Ltd, Delhi.
- Jaspal Kaur (Dr.) 2013, **Anuvad te Maukhik Anuvad Kala**, Manpreet Parkashan, Delhi.
- Ram Chander Verma Shashtri "n.d.", **Anuvad Kala**, Ashok Prakashan, Delhi.
- Sushil Kumar (2003), **Anuvad da Samvaad**, Udaan Publication, Mansa.

SUGGESTED READINGS:

- Morley, David (2007), **The Cambridge Introduction to Creative Writings,** New York, Cambridge.
- Robinson, Peter (2010), **Poetry and Translation**, Liverpool University Press, England.
- Ray, Mohit K. (Ed.) (2008), **Studies in Translation**, Atlantic Publishers, Delhi.

(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

SIRJNNATMAK LEKHAN
(Creative Writing)
(सृजनात्मक लेखन)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
SIRJNNATMAK LEKHAN (Creative Writing) (सृजनात्मक लेखन)	2	1	0	1	Class 12th pass in any subject	Working Knowledge of the concerned language

Credits: **2** **L/T/P= 1/0/1**

LEARNING OBJECTIVE:

- To understand and appreciate skill of creative writing. To understand main ideas and details in different aspects of creative writing.
- To understand the contemporary position of Punjabi mass media and importance of creative writing in this field.
- To understand the importance of the skill of creative writing in the profession of electronic media.

LEARNING OUTCOMES:

- Students will demonstrate an understanding of terms, themes, strategies to learn the skill of creative writing. ·
- They can express their understanding of the relationship between Punjabi mass media (print and electronic) and the skill of creative writing. ·
- To know the scope of creative writing as a profession.

UNIT I ਸਾਹਿਤ ਸਿਰਜਣਾ: ਬੁਨਿਆਦੀ ਨੁਕਤੇ– साहित्य सृजन: मूल बिंदु

(Literary Creation: Basic Points) (Theory) (8 Hours)

- **ਸਾਹਿਤ ਦੀ ਪਰਿਭਾਸ਼ਾ, ਸਰੂਪ ਅਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ**

  साहित्य की परिभाषा, सवरूप और विशेषताएं

  Definition, scope and characteristics of literature
- **ਸਾਹਿਤ ਅਤੇ ਸਮਾਜ: ਪਰਸਪਰ ਅੰਤਰ-ਸੰਬੰਧ**

  साहित्य और समाज: परस्पर अंतर्संबंध

  Literature and Society: Mutual Interrelation
- **ਸਾਹਿਤ ਅਤੇ ਹੋਰ ਅਨੁਸ਼ਾਸਨ: ਮਨੋਵਿਗਿਆਨ, ਦਰਸ਼ਨ ਸ਼ਾਸਤਰ ਅਤੇ ਸਮਾਜ ਸ਼ਾਸਤਰ**

  साहित्य और अन्य अनुशासन: मनोविज्ञान, दर्शन शास्त्र और समाज शास्त्र

  Literature and other disciplines: Psychology, Philosophy and Sociology

Unit II ਕਾਵਿ ਲੇਖਣ - कविता लेखन **(Poetry writing)**

(Theory & Practical) (3+10 Hours)

- **ਕਵਿਤਾ: ਪਰਿਭਾਸ਼ਾ, ਰੂਪ ਅਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ**

  काव्य: परिभाषा, रूप और विशेषताएं

  Poetry: definition, forms and characteristics
- **ਕਾਵਿ ਭਾਸ਼ਾ, ਕਾਵਿ-ਬਿੰਬ ਅਤੇ ਪ੍ਰਤੀਕ, ਛੰਦ, ਬਹਿਰ**

  काव्य भाषा, काव्य बिंब और प्रतीक, छंद, बहर

  Poetic language, poetic images and metaphors, verse
- **ਗੀਤ, ਗ਼ਜ਼ਲ ਅਤੇ ਖੁੱਲ੍ਹੀ ਕਵਿਤਾ ਦੀ ਸਿਰਜਣਾ ਕਰਨਾ**

  गीतों, ग़ज़लों और छंद मुक्त कविता की रचना

  Composing songs, ghazals and open verse

Unit III ਕਹਾਣੀ ਲੇਖਣ - लघुकथा लेखन **(Short Story writing)**

(Theory & Practical) (2+10 Hours)

- **ਨਿੱਕੀ ਕਹਾਣੀ: ਪਰਿਭਾਸ਼ਾ, ਸਰੂਪ ਅਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ**

  लघुकथा: परिभाषा, सवरूप और विशेषताएं

  Short Story: definition, scope and characteristics
- **ਕਥਾਨਕ, ਪਾਤਰ ਚਿਤਰਣ, ਵਾਰਤਾਲਾਪ ਅਤੇ ਭਾਸ਼ਾ ਸ਼ੈਲੀ**

  कथानक, चरित्र चित्रण, संवाद और भाषा शैली

  Plot, characterization, dialogue and language style
- **ਨਿੱਕੀ ਕਹਾਣੀ ਲੇਖਣ**

  लघुकथा लेखन

  Composing a short story

Unit IV ਨਿਬੰਧ ਲੇਖਣ- निबंध लेखन **(Essay writing)**

(Theory & Practical) (2+10 Hours)

- **ਨਿਬੰਧ: ਪਰਿਭਾਸ਼ਾ, ਸਰੂਪ ਅਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ**

  निबंध: परिभाषा, सवरूप और विशेषताएं

  Essay: definition, scope and characteristics
- **ਵਿਸ਼ੇ ਦੀ ਚੋਣ ਅਤੇ ਲੋੜੀਂਦੀ ਸਮੱਗਰੀ ਦੀ ਖੋਜ**

  विषय का चयन और आवश्यक सामग्री की खोज

  Selection of topic and search of required material
- **ਨਿਬੰਧ ਲੇਖਣ**

  निबंध लेखन

  Composing an essay

ESSENTIAL READING:

- Aabid Ali And Sandeep Kumar, 2017, **Creative and Mass Writing Methods**, Nirmal Publishing House, Kurukshetra.
- Anjana Neira Dev, Marwah Anuradha and Pal Swati, (2008), **Creative Writing: A Beginner's Manual**, Pearson Education India, Delhi.
- Jaggi, Rattan Singh, (2003), **Sahit de Roop**, Punjabi University, Patiala.
- Jagjit Kaur (Dr.) & Manjit Singh (Dr.) (eds.), (2013), **Sirjnnatmak Lekhan ate Jan-Sanchar Madhiyam**, Manpreet Parkashan, Delhi.

SUGGESTED READING:

- Dil, Balbir Singh (1991), **Punjabi Nibandh: Saroop, Sidhant ate Vikas,** Punjabi University, Patiala.
- Gautam, Ramesh (2016), Madhuri Sabodh, Rajinder Gautam and Prabhat Ranjan, **Rachnatmak Lekhan,** Bhartiya Jnanpith, New Delhi.
- Joginder Singh (Prof.), **Pinal te Arooz,** Punjabi Sahit Academi, Ludhiana.
- Phul, Gurdial Singh (Prof.), Suri, Kartar Singh (Prof.) (1954), **Naval Kala te Punjabi Navalkari,** Lok Sahit te Parkashan, Amritsar.
- Sidhu, Gurumail (2020), **Khulli Kavita De Maapdandh,** Chetna Parkashan, Ludhiana.

INTERNET LINKS:

- **ਕਵਿਤਾ ਕਿਵੇਂ ਲਿਖੀਏ ਲਈ ਲਿੰਕ:** https://www.youtube.com/watch?v=X2LtYOJuJd8

- ਕਹਾਣੀ ਕਿਵੇਂ ਲਿਖੀਏ ਲਿੰਕ: https://www.youtube.com/watch?v=IkZ69t1G5Zc
- ਪੰਜਾਬੀ ਸਾਹਿਤ ਬੋਧ ਲਈ ਲਿੰਕ: https://punjabilibrary.com/product/punjabi-sahit-bodh/
- ਨਾਵਲ ਕਲਾ ਤੇ ਪੰਜਾਬੀ ਨਾਵਲਕਾਰ ਲਈ ਲਿੰਕ:
  http://www.panjabdigilib.org/webuser/searches/displayPage.jsp?ID=7263&page=1&CategoryID=1&Searched

*(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

IT Skills and Data Analysis - I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
IT Skills and Data Analysis - I	**2**	0	0	**2**	Class XII	NIL

Learning Objectives

The primary objectives of the course will be to:

- Familiarise the student with the quantitative skills required for representing and interpreting data for the purpose of decision making.
- Equip the student with some fundamental concepts, which play a critical role in understanding and visualizing real world data.
- Enable the student to analyze data and problem situations using relevant IT tools.

Learning Outcomes

By the end of the course students will be able to

- Represent and interpret data in tabular and graphical forms
- Understand and interpret the measures of central tendency and dispersion.
- Use IT tools such as spreadsheets to visualise and analyse data.

PEDAGOGY

Relevant concepts and theory will be introduced which will be supplemented by hands-on activities enabled by the use of spreadsheets. This is a two credit course and will comprise two lecture periods per week. As this is essentially an activity-based course, it will involve two consecutive lecture periods, once in a week.

SYLLABUS
Practical

Unit I : What is Statistics ? (24 hours)

This unit provides an introduction to the fundamentals of datasets, sources of data, frequency distributions and graphical representations of data. The aim is to give students a hands-on experience of initiating data analysis through a spreadsheet.

- Concept of datasets (Variables, Observations)
  Reference 1, Chapter 2
- Different types of variables (Quantitative and Qualitative)
  Reference 1, Chapter 2
- Distinction between primary and secondary sources of data
  Reference 1, Chapter 2
- Basic idea of using questionnaire to collect primary data for analysis
  Reference 2, Chapter 1 [Section 1.6]
- How to construct a questionnaire
  Reference 1, Chapter 1
- Concept of frequency distribution: cumulative and relative frequencies
  Reference 2, Chapter 2
- Introduction to spreadsheet
  Reference 2, Chapter 2
  - Tabular and graphical presentation of data: data tables, frequency curve, histogram,bar graphs, pie charts (through the use of spreadsheets)
    Reference 2, Chapter 2

Unit II: Measures of Central Tendency and Dispersion (36 hours)

The focus of this unit will be to familiarise the student with summary statistics to describe datasets. In particular, two important characteristics of data, viz., central tendency anddispersion, will be used to summarise datasets using a spreadsheet. The concept of the Normal distribution and its characteristics will be discussed to highlight its relevance in modelling real life phenomenon.

- Measures of central tendency: mean, median, mode
  Reference 2, Chapter 3
- Examples of situations where it is appropriate to use the mean, median and mode asa measure of central tendency
  Reference 2, Chapter 3
- Weighted mean
  Reference 2, Chapter 3
- Measures of dispersion: range, variance, standard deviation
  Reference 2, Chapter 3

- Quartiles, deciles and percentiles
  Reference 2, Chapter 3
- Visualize the measures of central tendency and dispersion through frequency curveand histogram
  Reference 2, Chapter 3
- Skewness and kurtosis
  Reference 2, Chapter 3
- Normal curve and its basic properties : visual representation of population characteristics (height, weight, IQ etc.)
  Reference 2, Chapter 5 [Section 5.6]

References (Readings and Resources)

1. Rowntree, D., Statistics without tears - A primer for non-mathematicians, Allyn and Bacon, 2018.
2. Levin, Rubin, Rastogi and Siddiqui, Statistics for Management, 7th Edn, 2014

Suggested Data Sources

The following data sets are suggested to carry out the activities

1. https://data.worldbank.org/
2. https://www.statista.com/
3. https://data.gov.in/
4. https://censusindia.gov.in/
5. https://www.kaggle.com/
6. http://data.un.org/

Weekly Plan

Weeks I and II: Students learn about the concept of datasets (Variables, Observations) ; Different type of Variables (Quantitative and Qualitative); Distinction between primary and secondary sources of data

Weeks III and IV: Basic idea of using questionnaire and how to construct a it; Concept of frequency distribution - cumulative and relative frequencies; Introduction to spreadsheet

Weeks V and VI: Tabular and graphical presentation of data: data tables, frequency curve, histogram, bar graphs, pie charts. Students to explore various representations on spreadsheet using datasets

Weeks VII and VIII: Introduction of Measures of Central Tendency: Mean, Median, Mode through appropriate examples explaining the use of each one of them in various situations. Understanding the concept of Weighted mean;

Weeks IX and X: Measures of dispersion: Range, Variance, Standard deviation; Visualizingthe measures of central tendency and dispersion through frequency curve and histogram. Understanding Quartiles, deciles and percentiles numerically.

Weeks XI and XII: Representation of population characteristics using the basic propertiesof a Normal Curve, skewness and kurtosis.

Weeks XIII and XIV: Assignments based on Units 1 and 2 using spreadsheets to consolidate the learning of concepts covered.

Examination scheme and mode:
Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

IT Skills and Data Analysis - II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
IT Skills and Data Analysis - II	**2**	0	0	**2**	Class XII	IT Skills and Data Analysis - I

Learning Objectives

The primary objectives of the course will be to

- Familiarise the student with the quantitative skills required for corelating the datafor the purpose of decision making.
- Equip the student to visualise functions which play a critical role in understandingand visualizing real world data.
- Enable the student to analyze data and problem situations using relevant IT tools.

Learning Outcomes

By the end of the course students will be able to

- Establish relationships between variables using correlation and regression analysis.
- Visualize functions and differentiate between linear and nonlinear functions.
- Use IT tools such as spreadsheets to visualise and analyse data.

PEDAGOGY

Relevant concepts and theory will be introduced which will be supplemented by hands-on activities enabled by the use of spreadsheets. This is a two credit course and will comprise two lecture periods per week. As this is essentially an activity-based course, it will involve two consecutive lecture periods, once in a week.

SYLLABUS

Unit I: Functions and their graphical representations (16 hours)

This unit introduces the graphical visualisation of functions to understand the relationship between two variables.

- Definition and graphical representation of a function, vertical line test
  Reference 3
- Polynomial functions: linear, quadratic and cubic functions
  Reference 3
- Reciprocal, exponential and logarithmic functions
  Reference 3
- Concept of slope of a function through graphical representation
  Reference 3

Unit II: Relationship between Variables (28 hours)

Students will learn about scatter diagrams and correlation analysis as a means to describe the nature and strength of association between two variables. The concept of regression analysis will be introduced as a method for quantifying the relationship between two variables. Further, multiple linear regression will be discussed for situations where more than one independent variable is needed to estimate the dependent variable. The focus will be mainly on interpreting estimated regression coefficients.

- Scatter diagrams
  Reference 2, Chapter 12
- Correlation analysis : measure and interpretation of correlation coefficient andcoefficient of determination
  Reference 2, Chapter 12
- Hypotheses, model specification and testing
  Reference 2, Chapter 12
- Bi-variate regression analysis: method of least squares, curve of best fit as a modelfor prediction
  Reference 2,
  Chapter 12
- Multiple Linear Regression
  Reference 2,
  Chapter 13

Weeks 12 – 14: Project Presentations and Viva (16 hours)

References (Readings and Resources)

1. Rowntree, D., Statistics without tears - A primer for non-mathematicians, Allyn andBacon, 2018.

2. Levin, Rubin, Rastogi and Siddiqui, Statistics for Management, 7th Edn, 2014
3. Boundless Algebra : https://courses.lumenlearning.com/boundless-algebra/

Suggested Data Sources

The following data sets are suggested to carry out the activities

1. https://data.worldbank.org/
2. https://www.statista.com/
3. https://data.gov.in/
4. https://censusindia.gov.in/
5. https://www.kaggle.com/
6. http://data.un.org/

Weekly Plan

Weeks I and II: Understanding the definition of a function; graphical representation of a function and vertical line test; visualising various kinds of functions (Linear, quadratic andcubic functions)

Weeks III and IV: Reciprocal, exponential and logarithmic functions; Interpretingandvisualising the concept of slope of a function through graphical representations.

Weeks V and VI: Scatter Diagrams; Correlation analysis - measure and interpretationofcorrelation coefficient and coefficient of determination.

Weeks VII to IX: Hypotheses, model specification and testing; Understanding Bi- variateRegression analysis: Method of Least Squares; Curve of best fit as a model forprediction.

Weeks X and XI: Multiple Regression Analysis

Weeks XII to XIV: Project Presentations and Viva

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Basic IT Tools

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Basic IT Tools	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

- To enable students develop IT skills that are a pre-requisite in today's work environment.
- To equip them with basic computing skills that will enhance their employability in general.
- To enable the student to analyse and present information in a meaningful manner.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to use word-processor to generate documents with appropriate formatting, layout, review and referencing.
- By studying this course, students will be able to manage data in worksheets and workbooks and analyze it using spreadsheet functions and inbuilt formulas.
- By studying this course, students will be able to draw analysis on data using spreadsheets to make decisions.
- By studying this course, students will be able to make meaningful representations of data in the form of charts and pivot tables.
- By studying this course, students will be able to manage data in database tables and use the same for generating queries, forms and reports.

SYLLABUS

Course Contents:

Unit 1: Introduction to Spreadsheets **(16 hours)**

Spreadsheets: Concept of worksheets and workbooks, creating, opening, closing and saving workbooks, moving, copying, inserting, deleting and renaming worksheets, working with multiple worksheets and multiple workbooks, controlling worksheet views, naming cells using name box, name create and name define; Exchanging data using clipboard, object linking and

embedding; Printing and Protecting worksheets: Adjusting margins, creating headers and footers, setting page breaks, changing orientation, creating portable documents and printing data and formulae; Implementing file level security and protecting data within the worksheet; Understanding absolute, relative and mixed referencing in formulas, referencing cells in other worksheets and workbooks, correcting common formula errors, working with inbuilt function categories like mathematical, statistical, text, lookup, information, logical, database, date and time and basic financial functions.

Unit 2: Data Analysis in Spreadsheets (16 hours)

Consolidating worksheets and workbooks using formulae and data consolidate command; Choosing a chart type, understanding data points and data series, editing and formatting chart elements, and creating sparkline graphics, Analysing data using pivot tables: Creating, formatting and modifying a pivot table, sorting, filtering and grouping items, creating calculated field and calculated item, creating pivot table charts, producing a report with pivot tables. Introduction to recording and execution of macros.

Unit 3: Word Processing (12 hours)

Introduction: Creating and saving your document, displaying different views, working with styles and character formatting, working with paragraph formatting techniques using indents, tabs, alignment, spacing, bullets and numbering and creating borders; Page setup and sections: Setting page margins, orientation, headers and footers, end notes and foot notes, creating section breaks and page borders; Working with tables: Creating tables, modifying table layout and design, sorting, inserting graphics in a table, table math, converting text to table and vice versa; Create newspaper columns, indexes and table of contents, Spell check your document using inbuilt and custom dictionaries, checking grammar and style , using thesaurus and finding and replacing text; Create bookmarks, captions and cross referencing, adding hyperlinks, adding sources and compiling and bibliography; Mail merge: Creating and editing your main document and data source, sorting and filtering merged documents and using merge instructions like ask, fill-in and if-then-else; Linking and embedding to keep things together.

Unit 4: Databases (16 hours)

Introduction to Database Development: Database Terminology, Objects, Creating Tables, working with fields, understanding Data types, Changing table design, Assigning Field Properties, Setting Primary Keys, using field validation and record validation rules, Indexing, working with multiple tables, Relationships & Integrity Rules, Join Properties, Record manipulation, Sorting & Filtering; Select data with queries: Creating Query by design & by wizard (Select, Make Table, Append, Delete, Cross Tab, Update, Parameterized Query, Find Duplicate and Find Unmatched), Creating multi table queries, creating & working with table joins. Using operators & expressions: Creating simple & advance criteria; Working with forms: Creating Basic forms, working with bound, unbound and calculated controls, understanding property sheet, Working with Data on Forms: Changing Layout, creating Sub Forms, creating list box, combo box and option groups; Working with Reports: Creating Basic Reports, Creating Header & Footer, Placing Controls on reports, sorting & grouping, Creating Sub reports.

Essential/recommended readings

- Swinford, E., Dodge, M., Couch, A., Melton, B. A. (2013). Microsoft Office Professional 2013. United States: O'Reilly Media.
- Wang, W. (2018). Office 2019 For Dummies. United States: Wiley. Microsoft Lambert, J. (2019). Microsoft Word 2019 Step by Step. United States: Pearson Education.

Suggestive readings

- Jelen, B. (2013). Excel 2013 Charts and Graphs. United Kingdom: Que.
- Alexander, M., Jelen, B. (2013). Excel 2013 Pivot Table Data Crunching. United Kingdom: Pearson Education.
- Alexander, M., Kusleika, R. (2018). Access 2019 Bible. United Kingdom: Wiley.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Advanced Spreadsheet Tools

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Advanced Spreadsheet Tools	2	0	0	2	Class XII	Basic Knowledge of MS Excel

Learning Objectives

The Learning Objectives of this course are as follows:

- To enable the students to use Excel for advanced data analysis
- To equip the students to with automation skills on excel
- To enable the students to use excel for informed decision making.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to make meaningful representations of data in the form of charts and pivot tables.
- By studying this course, students will be able to draw analysis on data using spreadsheets and use interpretation to make decisions.
- By studying this course, students will be able to generate word documents with appropriate formatting, layout, proofing.
- By studying this course, students will be able to manage data for generating queries, forms and reports in a database.

SYLLABUS

Unit 1: Excel Advanced Techniques (12 hours)

Templates, Efficiency, and Risk (Standard Deviation, Variance, and Coefficient of Variation), Data Validation; *Functions and Power functions, Array Formulae (Frequency Distribution, mode.mult, mode.sngl), Tables, Advanced Range Names, What–if-analysis: Goal-seek, Data tables, and Scenario Manager; Data analysis ToolPak: Descriptive Statistics, Moving averages, Histogram, Covariance, correlation, and Regression analysis (only for projection); solver add-in. Problem Solving using Solver (optimal product mix, workforce scheduling, transportation, capital budgeting, financial planning), Integrating excel with other tools: MS word, outlook, PowerPoint, Access, Power BI.

Unit 2: Excel Interactivity and Automation (16 hours)

Index and Match, Offset, Dynamic Charting, Database functions, Text functions, and Error functions: IfError, IsError, Aggregate, Circular Reference, Formula Auditing, Floating-Point Errors, Form Controls (Button, Combo, Check box, Spinner, List, Option), Visual Basic (only basic). Recording Macros, Absolute and relative macros, editing macros, Use of spinner

buttons and command buttons; Sub Procedure, Function Procedure (creating New Functions); Working with Loops: Do_while loop, For_Next loop; Creating User Forms: Message Box, Input Box; If_Then_Else.

Unit 3: Introduction to VBA (16 hours)

Conditional Formatting, Charts that Inspire (Waterfall, Column, Line, Combo, Thermometer, Scatter, Histogram) Slicers, Sparklines, Graphics Tricks and Techniques, Worksheet Automation using Macros: Absolute and relative macros, editing macros, Creating new functions using macros, Use of spinner buttons and command buttons.

Unit 4: Data Analysis and Decision-Making (16 hours)

Working with External Data, Advanced Uses of PivotTables, PowerPivot, Reporting with PowerPivot, Power query, Dashboard, Creating a spreadsheet in the area of: Loan and Lease statement; Ratio Analysis; Payroll Accounting; Capital Budgeting (NPV & IRR), Portfolio Management, Breakeven analysis, and Sensitivity analysis; Operations Management: Constraint, Forecasting & Trend Analysis optimization, Assignment Problems; Depreciation Accounting (Single Method); Graphical representation of data; Frequency distribution and its statistical parameters; Correlation and Regression Analysis

Essential/recommended readings

- Excel 2016 Power Programming with VBA, Michael Alexander, Dick Kusleika, Wiley.
- Financial Analysis and Modelling Using Excel and VBA, Chandan Sengupta, Second Edition, Wiley Student Edition.
- MS Excel 2016, Data Analysis & Business Modelling, Wayne Winston, PHI.

Suggestive readings

- Microsoft Excel 2016 - Data Analysis and Business Modelling Paperback – 1 May 2017 Wayne L. Winston, Microsoft Press.
- Microsoft Excel Practical Formulae: From Basic Data Analysis to Advanced Formulae
- Manipulation Diane Griffiths.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

STATISTICAL SOFTWARE PACKAGE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Statistical Software Package	2	0	0	2	Class XII	Basic course in Statistics

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with data analysis using a statistical software package like SPSS or any other equivalent.
- To provide skills for research analysis and increaseemployability.
- To lay a foundation for advance data analysis work and higher education.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand basic functions of statistical software package for managing variables and generate descriptive statistics to describe the data and analyze data through graphs and charts.
- After studying this course, students will be able to test differences in sample means.
- After studying this course, students will be able to identify relationships between variables and develop models for predicting dependentvariables on the basis of independent variables.
- After studying this course, students will be able to understand data structures and identify clusters in data.
- After studying this course, students will be able to identify principal components that are relevant from a host of variables.

SYLLABUS

Unit 1: Getting started with the Software **(16 hours)**

Introduction: Data Entry, Storing and Retrieving Files, Generating New Variables; Managing Data – Listing cases, replacing missing values, computing new variables, recoding variables, selecting cases, sorting cases, merging files, Graphs – Creating and editing graphs and charts; Descriptive Statistics Procedures: Frequencies, Descriptive, Explore, Cross Tabulation.

Unit 2: Hypothesis Testing for Means **(12 hours)**

T-tests: One sample test, Independent samples and paired samples t-test; ANOVA – One-way analysis of variance with post hoc analysis, Two-way analysis of variance.

Unit 3: Testing for Association between Variables (16 hours)

Chi-square Test of Independence; Bivariate Correlation Analysis: Simple Scatter Plot; Correlation Coefficient: Pearson, Spearman Rho and Kendall Tau Coefficient. Factor analysis.

Unit 4: Regression Analysis (16 hours)

Linear Regression: Simple Linear Regression, Multiple regression analysis with matrix scatterplot. Multiple Regression: Standard (Enter) and Stepwise Method. Binary Logistic Regression.

Essential/recommended readings

- Performing Data Analysis using IBM SPSS, Lawrence S. Meyers, Glenn C. Gamst, A. J. Guarino, Wiley Publication
- SPSS for Windows Step by Step A Simple Guide and Reference, Darren George and Paul Malley
- SPSS in Simple Steps, Kiran Pandya, Smruti Bulsari, Sanjay Sinha, Dreamtech Press

Suggestive Readings

- Using SPSS in Research, Dr. Radha Mohan, Neelkamal.

Examination scheme and mode:
Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

FINANCIAL DATABASE AND ANALYSIS SOFTWARE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Financial Database and Analysis Software	**2**	**0**	**0**	**2**	**Class XII**	**NIL**

Learning Objectives

The Learning Objectives of this course are as follows:

- To enable students to obtain data from financial database.
- To enable to use R languagefor statistical & econometric data analysis.
- To develop skills that can help in solving your research problems.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the utility of a financial database
- After studying this course, students will be extract data from financial database (Prowess IQ)
- After studying this course, students will be perform data analysis using R
- After studying this course, students will be apply 'R' and ProwessIQ in financial analysis and research.

SYLLABUS

Unit I (Financial Database) **(12 hours)**

An Introduction to financial database ProwessIQ from CMIE: Creating company set-, creating spreadsheets, use of elements in Ribbons – Company address and identity identicators, business segments and products, Ownership structure and governance indicators, Financial Statements, Stock prices and capital changes, Capex and M&A, indices and index number. Formulating queries and advance queries Student is expected to be able to extract different types of data for an index, an industry and company data Selection of company/s, period to be studied. Data extraction from balance sheet, profit & loss statement and cash flow statements Stock market data- price and volume, BSE/NSE, adjusted prices Saving and exporting data to a spreadsheet

for further analysis.

Unit II (Fundamentals of R **(16 hours)**

Overview of the R language, Input and output of data in R, Help command and Directory in R, In-built functions in R, Operators in R; Assignment, Arithmetic, logical, and Relational operators, Using R studio, Scripts, Text editors for R, Graphical User Interfaces (GUIs) for R, installing packages and libraries, Variable classes (numeric, character, logical, complex, missing), Data Types in R; Vectors, Matrices, Arrays, Lists, Factors, and Data Frames, Important operations of these Data Types, Using data from external files- reading & writing data to external files, Creating and storing R workspaces.

Unit III (Descriptive Analysis and Data Visualizations) **(16 hours)**

Data preparation; Data cleaning and Missing value treatment, Data Exploration and Manipulation, Data Visualization; Bar chart, pie chart, Histogram, Frequency curve, Scatter plot, Box & Whisker plot etc., Important R functions for Describing a data; Mean, Median, Range, Standard deviation, Variance, Five number summary, Correlation coefficients for a bivariate data.

Unit IV (Predictive Analysis) **(16 hours)**

Simple and Multiple Regression using R, Estimating Regression Equation by Ordinary Least Squares in R, Violations of Classical Assumptions: multicollinearity, heteroscedasticity, autocorrelation and model specification errors, their identification, their impact on parameters; tests related to parameters and impact on the reliability and the validity of inferences in case of violations of Assumptions; methods to take care of violations of assumptions, goodness of fit. Time Series Analysis using R (Basic idea only).

Essential/recommended readings

- Gardener, M., *Beginning R: The Statistical Programming Language*, Wiley & Sons. 2018
- Wickham, H., et al. *R for Data Science: Import, Tidy, Transform, Visualize, and ModelData*, O'Reilly', 2017
- Motwani, B., Data Analytics with R, Wiley & Sons, Indian edition 2021
- Chang, R Graphics Cookbook- Practical Recipes for Visualizing Data; O' Reilly Media
- Gujarati, D.N. et al. Basic Econometrics, McGraw Hill India, 5e, 2018

Useful web links

- https://prowessiq.cmie.com
- CRAN website: https://cran.r-project.org/
- https://rstudio.com/products/rstudio/download/ (R studio)
- http://r-statistics.co

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Statistics with 'R'

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Statistics with R	2	0	0	2	Class XII	Basic course in Statistics

Learning Objectives

The Learning Objectives of this course are as follows:

- To enable students to handle data in the R software thereby helping them to understand meaningful statistical analysis performed on the data.
- To enable students to extract data, and perform basic statistical operations entailing data analysis such as – data cleaning, data visualisation, data summarisation, and regression amongst others.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to extract and Read data into R, manipulate, and analyse it
- After studying this course, students will be able Tto debug, organize, and comment R code
- After studying this course, students will be able to understand the R environment for downloading, installing, and using packages
- After studying this course, students will be able to do basic programming to write own functions
- After studying this course, students will be able to use loops
- After studying this course, students will be able to create standard and customized graphics
- After studying this course, students will be able to perform basic statistical operations and regression.

SYLLABUS

Unit 1: Data Extraction and Spread Sheet Exploration (12 hours)

Extraction of economics and financial data from Prowessiq, RBI, IMF, World bank or an equivalent financial/economic database. The students should be able to save and export the data to 'R-environment' for further analysis.

Unit 2: Basics of R-language **(28 hours)**

Overview of the R language: Installing R and R Studio : Using R studio, Scripts, Text editors for R, Graphical User Interfaces (GUIs) for R, Creating and storing R workspaces, installing packages and libraries, Mathematical operations.

Data Types in R – Numeric, Integer, Character, Logical, Complex and missing data. Data Structures in R

- Vectors – Creation, Arithmetic operations of Vectors, Vector Sub setting, Sorting and Sequencing functions.
- Matrix and Arrays – Creation, Arithmetic Operations of matrix, Sub setting, Use of Drop Function.
- Factors – Converting a vector into factor, assigning levels and labels, ordered Factor.
- List – Creating a list, accessing elements from a list, adding a new element and eliminating an existing element form the list, converting list to vectors.
- Data Frames – Creation of Data Frame, adding new columns, rows and removing columns, accessing column using the $ sign, importing a data set (important file formats such as csv, txt and spreadsheet), aggregate function and subsetting of dataframes, tapply function, manipulation using dplyr package (select, filter, arrange, mutate and group by function, pipe operator).

Programming Fundamentals: Logical operators, conditional statements (if, else, else if statements in R), While loops, For loops, repeat loops.

Creating functions in R.

Reading data in R (file formats such as csv, txt, and xlsx), Writing data to external files (file formats such as csv, txt, and xlsx), writing a table to a file, print function.

Unit 3: Basic Statistics and Regression **(20 hours)**

Summarizing and exploring data: Descriptive statistics (mean, median, mode, variance, skewness, five-point summary), dealing with missing data in R, Data cleaning (dplyr package, tidyr package and pipe operator), Exploratory Data Analysis; data visualization using inbuilt functions and ggplot2 package (pie chart, bar chart, line chart, histogram, box plot, scatter plot, Normal QQ plot).

Regression analysis using R: Regression vs Correlation, Simple and multiple regression, Ordinary least square, Assumptions of classical normal linear regression model (CNLRM), corrplot package, car package, lmtest package, scatter plot (using plot function and ggplot2 package) to understand the relationship between variables, lm, abline, predict, resid function, interpreting 'summary table' of the regression model, normality of residuals (qqnorm and qqPlot functions), multicollinearity (correlation matrix, corrplot and vif function), autocorrelation (acf plot and Durbin Watson test), heteroscedasticity (graphically, bptest, ncvTest), impact on estimates and inferences in case of violations of assumptions of CNLRM, methods to take care of violations.

Time series data, components of a time series data, additive and multiplicative time series model, ts function, diff function, plot of a time series data, time series data with linear trend; regression analysis using 'lm' function, stationarity in time series (concept only).

Essential/recommended readings

- Gardener, M. (2018), Beginning R: The Statistical Programming Language, Wiley & Sons.
- Sekhar, S.R.M., et al. (2017), Programming with R, Cengage Learning India.
- Wickham, H., et al. (2017), R for Data Science: Import, Tidy, Transform, Visualize, and Model Data, O'Reilly'.
- Field, A., Miles, J and Field (2012), Z. Discovering Statistics using R (Indian Reprint 2022), SAGE
- SimpleR - Using R for Introductory Statistics: John Verzani.
- The R Guide.
- Analysis of Epidemiological Data Using R and Epicalc: Virasakdi Chongsuvivatwong.
- Statistics Using R with Biological Examples: Kim Seefeld and Ernst Linder.
- An Introduction to R: Software for Statistical Modeling & Computing: Petra Kuhnert and Bill Venables.
- Gujarati, D.N. et al (2018), Basic Econometrics, McGraw Hill India, 5th Ed.
- CRAN website: https://cran.r-project.org/
- https://prowessiq.cmie.com,
- https://data.worldbank.org/indicator,
- https://rstudio.com/products/rstudio/download/(Rstudio)
- http://r-statistics.co

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

R Programming for Business Analytics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THECOURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
R Programming for Business Analytics	**2**	**0**	0	**2**	XII pass	NIL

Learning Objectives

- To introduce the basic concepts in R programming.
- To equip the students with the popular statistical programming language R.
- To familiarize the students with utility of 'R' for managerial decision making.

Learning outcomes

Upon successful completion of this course the student will be able to:

- Learn Syntax and Semantics of R Programming
- Understand the file system and data handling in R.
- Visualize and analyse the data using statistical methods.
- Apply best practice model design methodologies to real problems using R

SYLLABUS

Unit I: Introduction to R, Data Handling and Data Visualization (16 hours)
Introduction to R and familiarization of R Studio, Basic components in R Studio. R Syntax andprogramming , Understanding *tidyverse, tibble, dplyr, ggplot2, tidyr, purrr, readr, forcats, stringr* for tidying, manipulating and plotting data,

Unit II: Optimization Models using R (12 hours)
Linear Programming Models, Optimization models, understanding *optim(),*

Unit III: Machine Learning with R - Introduction to Supervised Learning (16 hours)
Classification based on similarities with k-nearest neighbours, odds with logistic regression, maximizing separation with discriminant analysis, classifying with decision tress, regression with kNN, random forest, XGBoost, Understanding *mlr, classif.* , regr.
,

Unit IV: Machine Learning with R - Introduction to Unsupervised Learning
(16 hours)

Dimension Reduction- Maximizing variance with Principal Component Analysis; k-meancluster, understanding *cluster*. .

Essential/recommended readings

- Boehmke, B. & Brandon, G.(2020). Handson Machine Learning with R, CRCPress.

- Horton, N.J. & Kleinman, K.(2015) Using R & R Studio for DataManagement, StatisticalAnalysis , and Graphics, CRC Press.
- Peng, R. D. (2016). *R programming for data science* (pp. 86-181).Victoria, BC,Canada: Leanpub.
- Lander, J. P. (2014). *R for everyone: Advanced analytics and graphics*. PearsonEducation.
- Teetor, P. (2011). *R cookbook: Proven recipes for data analysis, statistics, andgraphics*. " O'Reilly Media, Inc.".
- Zhao, Y., & Cen, Y. (2013). *Data mining applications with R*. Academic Press.

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Essentials of Python

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Essentials of Python	2	0	0	2	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce programming concepts using python
- To use python programming to solve problems of different domains

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the basics of programming language
- After studying this course, students will be able to develop, document and debug modular python programs
- After studying this course, students will be able to apply suitable programmimg constructs and built in data structures to solve a problem

SYLLABUS

Unit I (12 hours)

Introduction

What can Python do? Why Python? Python Syntax compared to other programming languages, Python Installation.

The print statement, Comments, Python Data Structures & Data Types, String Operations in Python, Simple Input & Output, Simple Output Formatting, Operators in python

Python Program Flow

Indentation, The If statement and its' related statement, An example with if and it's related statement, The while loop, The for loop, The range statement, Break &Continue, Assert, Examples for looping

Functions& Modules
Create your own functions, Functions Parameters, Variable Arguments, Scope of a Function, Function Documentations, Lambda Functions& map, n Exercise with functions, Create a Module, Standard Modules

Unit 2 **(16 hours)**

Exceptions Handling
Errors, Exception handling with try, handling Multiple Exceptions, Writing your own Exception

File Handling
File handling Modes, Reading Files, Writing& Appending to Files, Handling File Exceptions, The with statement

Classes In Python
New Style Classes, Creating Classes, Instance Methods, Inheritance, Polymorphism, Exception Classes & Custom Exceptions

Generators and iterators
Iterators, Generators, The Functions any and all, With Statement, Data Compression

Unit 3 **(16 hours)**

Data Structures
List Comprehensions, Nested List Comprehensions, Dictionary Comprehensions. Functions, Default Parameters, Variable Arguments, Specialized Sorts

Collections
namedtuple(), deque, ChainMap, Counter, OrderedDict, defaultdict, UserDict, UserList, UserString

Writing GUIs in Python (Tkinter)
Introduction, Components and Events, An Example GUI, The root Component, Adding a Button, Entry Widgets, Text Widgets, Check buttons

Python SQL Database Access
Introduction, Installation, DB Connection, Creating DB Table, INSERT, READ, UPDATE, DELETE operations, COMMIT & ROLLBACK operation, handling Errors

Network Programming
Introduction, A Daytime Server, Clients and Servers, The Client Program, The Server Program

Date and Time
Sleep, Program execution time, more methods on date/time

Unit 4 **(16 hours)**

Filter, Map, Reduce, Decorators, Frozen set, Collections

Regular Expression
Split, Working with special characters, date, emails, Quantifiers, Match and find all, character sequence and substitute, Search method

Threads ESSENTIAL
Class and threads, Multi-threading, Synchronization, Treads Life cycle, use cases

Accessing API ESSENTIAL
Introduction, Facebook Messenger, Openweather

DJANGO
Django Overview, Django Installation, Creating a Project, Usage of Project in depth Discussion, Creating an Application, Understanding Folder Structure, Creating a Hello World Page, Database and Views, Static Files and Forms, API and Security

Essential/recommended readings

- "Starting Out with Python plus My Programming Lab with Pearson eText -- Access Card Package (3rd Edition) Tony Gaddis ISBN-13: 978-0133862256".
- Python Crash Course: A Hands-On, Project-Based Introduction to Programming (2nd Edition).
- Head-First Python: A Brain-Friendly Guide (2nd Edition) by Paul Barry.
- Learn Python the Hard Way: 3rd Edition by Zed A. Shaw.
- Python Programming: An Introduction to Computer Science (3rd Edition) by John M. Zelle.
- Python Cookbook: Recipes for Mastering Python 3 (3rd Edition) by Brian Jones and David Beazley
- https://docs.djangoproject.com/
- Introduction to Programming using Python by Y. Daniel Liang. Publisher Pearson
- Taneja, S., Kumar, N. Python Programming- A modular Approach, Pearson Education India, 2018.
- Balaguruswamy E., Introduction to Computing and Problem Solving using Python, 2 nd edition, McGraw Hill Education, 2018

Examination scheme and mode:
Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

ANALYTICS / COMPUTING WITH PYTHON

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Analytics/ Computing with Python	2	0	0	2	Class XII	Basic Course of Python

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce machine learning techniques to students using Python programming
- To enable students to use various tools and and packages for advanced data analysis

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to learn about Python's main features and how they make Python a great tool for financial analysts.
- After studying this course, students will be able to get familiarized with Anaconda and Jupyter Notebook.
- After studying this course, students will be able to learn basics of Machine learning.
- After studying this course, students will be able to to apply these techniques on data.

SYLLABUS

Unit I **(20 hours)**

Python: General overview, Python vs. Excel , Anaconda and Jupyter notebook: Interface overview, Data types in Python, Python basic syntax: Assignment statements, creating variables, indentation, conditionals, and loops, writing user defined functions. Working with libraries: Pandas, NumPy, Matplotlib, and Seaborn. Python SQL Database Access: Introduction, Installation, DB Connection, Creating DB Table.

Unit II **(20 hours)**

Pandas: Working with Data Frame, Importing fromExcel or .csv files, Powerful filters and indexes. Numpy: Selecting data with loc and iloc, Using NumPy for speed, Trade-offs between arrays and lists, Array functions. Data cleansing and normalization: Libraries for data visualization, Types of charts/graphs and how to build them.

Unit III **(20 hours)**

Machine learning: Introduction, Definitions, Supervised, unsupervised, python libraries for machine learning: Sci-kit learn, Regression: Linear regression, logistic regression, over-fitting and regularization.

Essential/recommended readings

- Pilgrim, M. (2004). Dive Into Python. Apress. Ch. 1,2,4
- S Raschka, Python Machine Learning, V Mirjalili (2020), Ch 3
- Mitchell, T. M. (1997). Machine Learning. New York: McGraw-Hill.

Suggestive Readings

- Liu, Y. (2019). Python machine learning by example: Implement machine learning algorithms and techniques to build intelligent systems (Second edition.). Packt Publishing.
- Boschetti, A. (2016). Regression Analysis with Python (1st ed.). Packt Publishing. Retrieved from https://www.perlego.com/book/4457/regression-analysis-with-python- pdf (Original work published 2016)
- Sivanandam, S.N., & Deepa, S.N. (2011). Principles of soft computing.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Business Intelligence and Data Visualisation

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Business Intelligence and Data Visualisation	2	0	0	2	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand data and generate insights from it is by visualising it using a range of data visualization tools available.
- To understand large volume of data, discover trends, communicate effectively with all stakeholders and influence decisions.
- To develop Business Analytics skillset about how to create effective charts and interactive dashboards is extremely useful

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand and describe the main concepts of data visualization
- After studying this course, students will be able to determine the right type of graph for different types of data available or provided through hands on experience with handling real data sets
- After studying this course, students will be able to read reports, charts, graphs, figures, maps and derive meaning from them
- After studying this course, students will be able to create reports, data visualizations, and dashboards using Power BI and Tableau
- After studying this course, students will be able to understand how to automate tasks, perform ETL, create data models, perform computations, and present insights using data visualization and dashboards.

SYLLABUS

Unit-1 (POWER BI) **(22 hours)**

DATA PREPARATION- Connecting to different data sets, Basic data prep and model on Power Query, Drill down and Tooltip, AI visuals (Q&A, Analyze, Decomposition)

DATA VISUALIZATION AND DASHBOARDS- Inbuilt visuals, Custom visuals, Learn from existing reports, Visualization as a Tooltip, Final dashboard – putting it together Filter, slicer, bookmarks, buttons

Unit-2 (POWER BI) **(22 hours)**

PERFORMING COMPUTATIONS - Combine multiple files and folders, Merge and append, Custom calculations Conditional columns, Column from examples, Advanced Editor.

DAX - Introduction to Measures, Calculated Columns vs Quick Measures, Creating a Date Table, Time Intelligence Functions

POWER BI SERVICE - Publishing to Power BI Service, Power BI dataflows, Dashboards and Cross-Reporting

Unit- 3 (TABLEAU) **(16 hours)**

VISUALIZATIONS- Introduction to Dimensions and Measures, Bar Chart, Line Chart, Table, Heat Map, Treemap, Packed Bubble, Tooltip

CALCULATIONS- Calculated Fields, Parameters, Introduction to Level of Detail (LOD) **FINAL DASHBOARD-** Animations, Tooltips, Dashboard and Stories

Essential/recommended readings

- The Definitive Guide to DAX – 2nd Edition Marco Russo Alberto Ferrari
- M Is for (Data) Monkey: A Guide to the M Language in Excel Power Query Ken Puls & Miguel Escobar
- Tableau Your Data! Fast and Easy Visual Analysis with Tableau Software by Daniel G. Murray. 1st Edition, WILEY.
- Steve Wexler, Jeffrey Shaffer, Andy Cotgreave: The Big Book of Dashboards – visualizing your data using real world business scenarios; Wiley
- Ryan Sleeper: Practical Tableau
- Cole Nussabaumer Knaflic : Storytelling with data- a data visualization guide for business professionals ; Wiley
- Visualize This: The Flowing Data Guide to Design, Visualization, and Statistics by Nathan Yau. 1st Edition

Useful Weblinks

- https://docs.microsoft.com/en-us/power-bi/
- https://powerbi.microsoft.com/en-us/customer-showcase/
- https://powerquery.microsoft.com/en-us/
- https://www.sqlbi.com/

Examination scheme and mode:
Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Digital Marketing

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Digital Marketing	2	0	0	2	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To acquaint the students with the knowledge of growing integration between the traditional and digital marketing concepts and practices in the digital era.
- To familiarize the students with the tools and techniques used by the digital marketers for driving the marketing decisions to attain marketing objectives.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the concept of digital marketing and its integration with traditional marketing.
- After studying this course, students will be able to understand customer value journey in digital context and behaviour of online consumers.
- After studying this course, students will be able to understand email, content and social media marketing and apply the learnings to create digital media campaigns.
- After studying this course, students will be able to examine various tactics for enhancing a website's position and ranking with search engines.
- After studying this course, students will be able to leverage the digital strategies to gain competitive advantage for business and career.

SYLLABUS

Unit 1: Marketing in the Digital World **(12 hours)**

Digital marketing: Concept, Features, Difference between traditional and digital marketing, Moving from traditional to digital Marketing; c

Digital Marketing Channels: Intent Based- SEO, Search Advertising; Brand Based-Display Advertising; Community Based-Social Media Marketing; Others-Affiliate, Email, Content, Mobile.

Customer Value Journey: 5As Framework; The Ozone O3 Concept Key; Traits of online consumer

Unit 2: Content and Email Marketing (8 hours)

Content Marketing: Step-by-step Content Marketing Developing a content marketing strategy Email Marketing: Types of Emails in email marketing, Email Marketing best practices

Unit 3: Social Media Marketing and Display Marketing (18 hours)

Social Media Marketing: Building Successful Social Media strategy; Social Media Marketing Channels; Facebook, LinkedIn, YouTube (Concepts and strategies)

Display Advertising: Working of Display Advertising; Benefits and challenges; Overview of Display ad Process.; Define- Customer, Publisher, Objectives; Format-Budget, Media, Ad Formats, Ad Copy.

Unit 4 Search Engine Marketing (22 hours)

Introduction of SEM: Working of Search Engine; SERP Positioning; online search behaviour, DMI's 5P Customer Search Insights Model.
Search Engine Optimization: Overview of SEO Process; Goal Setting-Types.
On-Page Optimization: Keyword Research, SEO Process -Site Structure, Content, Technical Mechanics, Headings, Image & Alt text, Social Sharing, Sitemaps, Technical Aspects-Compatibility, Structured Data Markup.
Off Page Optimisation: Link Formats, Link Building, Content Marketing, Social Sharing; Black and White Hat Techniques
Search Advertising: Overview of PPC Process; Benefits of Paid Search; Basis of Ranking; Goal Setting-Objectives; Account Setting-Creation of Google Ads, Campaign architecture, Campaign setup, Targeting, Bid Strategy, Delivery, Ad Scheduling, Ad Rotation, Keyword Selection; Ad Copy composition, Ad Extension

Essential/recommended readings

- Dodson, I. (2016). The art of digital marketing: the definitive guide to creating strategic, targeted, and measurable online campaigns. John Wiley & Sons.
- Kartajaya, H., Kotler, P., & Setiawan, I. (2016). Marketing 4.0: moving from traditional to digital. John Wiley & Sons.
- Ryan, Damien: Understanding Digital Marketing - Marketing Strategies for Engaging the Digital Generation. Kogan Page Limited

Suggested Readings

- Moutusy Maity: Internet Marketing: A practical approach in the Indian Context: Oxford Publishing
- Seema Gupta: Digital Marketing: Mcgraw Hill
- Ultimate guide to digital Marketing by Digital Marketer

Examination scheme and mode:
Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Social Media Marketing

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Social Media Marketing	2	1	0	1	Pass in XII	Pass in 'Digital Marketing' (SEC-Sem 1)

Learning Objectives

- To provide basic knowledge of social media marketing concepts
- To enhance skills as social media marketer and start a career in social media marketing.

Learning Outcomes

After completion of the course, learners will be able to:
1. Evaluate the role of social media in marketing, advertising and public relations.
2. Assess the optimal use of various social media platforms for social media marketing.
3. Analyse the importance of social media for developing an effective marketing plan, and assess ways to measure its performance.
4. Describe practical skills required for creating and sharing content through online communities and social networks.
5. Demonstrate and appreciate social media ethics to use social media spaces effectively.

SYLLABUS:

Unit 1: Introduction to Social Media Marketing: (4 hours)
Social Media Marketing- Concept and Importance.
Social Media Platforms- Online communities and Forums; Blogs and Microblogs, Social Networks, other contemporary social media platforms: Goals, Role in Marketing and Use as listening tools. Trends in SMM. Social Media Influencers.

Unit 2: Social media marketing Plan and Performance Measurement: (6 hours)

SMM Plan- Setting Goals, Determining Strategies, Identifying Target Market, Selecting Tools, Selecting Platforms, Implementation: Measuring Effectiveness - Conversion rate, amplification rate, applause rate: on page and on post level.

Unit 3: Content Creation and Sharing using Case Campaigns: (5 hours)

Blogging, Streaming Video and Podcasting: Criteria and approach-70/20/10 with risk variants, 50-50 content, Brand Mnemonic, Brand story. Contextualising content creation. Social Media Ethics.

Practical Exercises: 30 hours

The learners are required to:

1. Discuss the importance of social media in marketing, advertising and public relations by analysing

relevant case studies.

2. Examine the use of social media by your institution to improve alumni engagement.
3. Identify social media platforms for marketing a good, a service, an institution, an event and a person.
4. Promote any college event of your choice using social media. Measure the effectiveness of your campaign.
5. Create a blog/ vlog on any topic of your interest. Measure performance of your blog post.
6. Prepare a social media marketing plan for any product of your choice.
7. Prepare a calendar for scheduling various posts/campaigns via buffer or tweet deck. Find out the conversion rate, amplification rate, and the applause rate. Calculate the engagement rate and economic value/per visitor of the concerned campaigns.
8. Observe the engagement rate in twitter campaigns of your college and suggest improvements, if needed.
9. Assess the reviews/ratings, comments, likes, and dislikes of blog posts in the categories of health and nutrition, or yoga counselling, or family therapy.
10. Examine the twitter handles of Delhi Government or of Delhi University and find out how consistent they are in their reaction checks?
11. Design a social media plan for sensitising citizens for timely tax payments (Assuming that you are an honest tax-payer and feel that everyone should be like you).

Essengtial Readings

- Ahuja V(2015).Digital Marketing.Oxford University Press.
- Blanchard, O. (2011). Social Media ROI: Managing and Measuring Social Media Efforts in Your Organization. United Kingdom: Pearson Education.
- Charlesworth, A. (2014). An Introduction to Social Media Marketing. United Kingdom: Taylor & Francis.
- Gupta, S. (2020). Digital Marketing. India: McGraw Hill Education (India) Private Limited.
- Johnson, S. (2020). Social Media Marketing: Secret Strategies for Advertising Your Business and Personal Brand on Instagram, YouTube, Twitter, And Facebook. A Guide to being an Influencer of Millions. Italy: AndreaAstemio.
- Keller, K. L., Kotler, P. (2016). Marketing Management. India: Pearson Education.
- Maity M(2022). Digital Marketing.Oxford University Press.
- Mamoria C.B, Bhatacahrya A,Marketing Management. Kitab Mahal, Delhi
- Mathur,V. & Arora,S. Digital Marketing PHI Learning
- McDonald, J. (2016). Social Media Marketing Workbook: How to Use Social Media for Business. United States: CreateSpace Independent Publishing Platform.
- Parker, J., Roberts, M. L., Zahay, D., Barker, D. I., Barker, M. (2022). Social Media Marketing: A Strategic Approach. United States: Cengage Learning.
- Quesenberry, K. A. (2015). Social Media Strategy: Marketing and Advertising in the Consumer Revolution. United States: Rowman & Littlefield Publishers.
- Rishi, B., Tuten, T.L., (2020) Social Media Marketing, 3ed., Sage Textbook
- Setiawan, I., Kartajaya, H., Kotler, P. (2016). Marketing 4.0: Moving from Traditional to Digital. Germany: Wiley.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Digital Film Production

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Digital Film Production	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the students to the art of digital video making and editing
- To learn about the tools required for video making and editing
- To learn about the various aspects in pre and post production of videos.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the importance of various aspects of audio-video production
- After studying this course, students will be able to prepare an effective layout for making an effective video.
- After studying this course, students will be able to apply the tools required for video production and editing.

SYLLABUS

Course Contents:

Unit 1: Introduction, Financial Planning and Budgeting **(15 hours)**

Audio Production: Concept of Sound, Types of sound, Audio range, Know your equipment's (Acoustic, Microphone, Recorder, Audio Mixer, Cables & connectors), Process of recording, Mixing, Sound processing, Recording level, Audio Editing, Dubbing & voiceover (Process, steps)

Unit 2: **(15 hours)**

Video Production (Pre-Production): Concept, What is pre-production, Concept/visualization, R & D, Screen play writing, Storyboard making, Shooting script writing, Peoples involved in pre-production, Set making, Copyright , Music making, Budgeting, Production Design, Location hunting, Hiring of equipment & crew members

Unit 3: **(15 hours)**

Video Production (Production): Know your equipment, Camera & accessories, Lights & Camera support, Clapboard, Sound equipment, Field Monitor, Blocking, Rehearsal, Lighting, Shooting

Unit 4: **(15 hours)**

Video Production (Post Production): Compiling the concept and Shooting material to final stage, Peoples involved in Post-production, Know your equipment, Editing, Color grading, Publicity, Transmission, Distribution and Rating

Practical Exercises and Projects

- Recording & Mixing of multi-track audio
- Budget Making & Script writing 05 minutes program
- Shooting for 05 minutes program (News / Music Video / Documentary / Feature / Chat show / Discussion etc.)
- Editing of 05 minutes video program

Audio Production (Project)

- Knowing the audio equipment's & software
- Recording process
- Mixing & Editing of various sound
- Exporting sound in various audio formats & project

Video Production (Project)

- Story writing, Storyboard making, Shooting script writing
- Location hunting, Breakdown making, Budget making
- Set making, Lighting, Shooting
- Editing, BGM posting, Color grading, Publicity, Exhibition & Transmission

Suggested Readings:

- Digital Filmmaking for Beginners A Practical Guide to Video Production (ELECTRONICS) by Michael K. Hughes, McGraw Hill TAB.
- Digital Filmmaking for Beginners A Practical Guide to Video Production, McGraw Hill TAB
- The Digital Filmmaking Handbook, Mark Brindle
- Video Production, Vasuvi Belavdi, Oxford Higher Education

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Visual Communication and Photography

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Visual Communication and Photography	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

- To synthesize a comprehensive view of principles involved in Visual Communication.
- To appreciate and express the cultural significance of photography as visual art and understand its evolution and purposes.
- To develop an awareness of compositional and organizational strategies for the effective deployment of formal elements of visual art.
- To read visual texts with a deep knowledge of visual history and theory.
- To create an ability of situating the content and form of the visual representation of thematic context.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to acquire knowledge of the cultural and historical importance of the visual medium.
- After studying this course, students will be able to explore the fundamentals and underlying theories of Visual Communication.
- After studying this course, students will be able to develop a thorough knowledge of concepts, and skills in creating photographs.
- After studying this course, students will be able to learn to identify and analyze semiotics in photographs.
- After studying this course, students will be able to develop a craftsmanship in creating aesthetically pleasing photographs.

SYLLABUS

Course Contents:

Unit 1: Historical Background and Basics of Visual Communication (15 hours)

Unit Description: The Unit I will give a brief history of the visual arts from the caveman to modern man. Skills of artistic schools of thought and Intertextuality in art in relation to culture.

Topics- Concept and History of Visual Communication, Human Eye and Visual Process, Visual culture and Information Education Communication, Theories of visual communication - Gestalt Theory of visual communication, Perceptual theory of Visual communication, Semiotics and cognitive approach in visuals

Unit II: Theories of Visual Communication (15 hours)

Unit Description: This unit will put emphasis on theories, semiotics and the study of signs. Through semiotic theories improve critical thinking skills, and learn to use semiotics to think logically and to analyze visual media in context of culture.

Topics: Fundamentals of Design: Definition. Approaches to Design, Centrality of Design, Elements of Design, Principles of Visual and other Sensory Perceptions. Colour psychology and theory (some aspects), Definition, Optical / Visual Illusions, etc., Various stages of design process, Learning skills to read signs and signifier in visuals for social messaging

Unit III: Photography as Visual Communication (15 hours)

Unit Description: This unit will provide skills to learn camera and lighting techniques.

Topics: Introduction to photography, Camera – structure and function of camera , Characteristics of light, Sources of Light – Nature, Artificial and Available, Lighting techniques – three-point lighting, Exposure – focusing, aperture, shutter speed, Depth of field. , Kinds of light indoor and outdoor – Electronic flash and artificial lights, Light meters

Unit IV: Camera Compositions and Accessories (15 hours)

Unit Description: This unit will provide skills about camera accessories and designing aesthetically rich compositions.

Topics: Camera lenses and accessories, Basic shots, angle, and view, Composition, Role of photographic image in visual communication, Basics of photojournalism, photo-features, photo - essays, writing captions, visual storytelling.

Essential Readings

- Barnes, Susan B. An Introduction to Visual Communication: From Cave Art to Second Life, Peter Lang Pub, 2011.
- Berger, Arthur Asa, Seeing is Believing: An Introduction to Visual Communication, McGraw-Hill Education, 2012.
- Lester, Paul Martin, Visual Communication: Images with Messages (6ed), Cengage Learning, 2013.
- Photography: A Critical Introduction - edited by Liz Wells London, Routledge, Oxon, 2015.
- Farrell, I. Complete Guide to Digital Photography, Quercus Publishing, UK, 2014.

Suggested Readings

- Mandav, Pradeep, Visual Media Communication, Authors Press, 2001.
- Williams, Rich, Visual Communication: Integrating Media, Art, and Science, Routledge, 2007

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

CAD for Fashion

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
CAD for Fashion	2	0	0	2	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the concept of fashion sketching and fabric rendering
- To learn different softwares for fashion designing and rendering

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the basics of garment sketching and fabric rendering manually.
- After studying this course, students will be able to gain the knowledge about various computer design softwares – Adobe Photoshop, CorelDraw, Adobe Illustrator and Open source
- After studying this course, students will be able to learn the application of selected computer design softwares for fashion sketching.
- After studying this course, students will be able to develop proficiency in CAD for the creation of fabric textures and colour schemes.
- After studying this course, students will be able to Design a theme-based fashion collection using computer design software.

SYLLABUS

Course Contents:

Unit I: Fashion sketching **(30 hours)**

Unit Description: Fashion sketching plays an important role in designing to preview and visualize designs before sewing actual clothing. Thus, this unit aims to help students develop the skills in designing apparel through flat sketching of garment components both manually and digitally**.**

Topics: Flat sketching of garment components by hand – necklines, collars, sleeves, skirts, tops, and trousers, Introduction to vector-based drawing softwares – CorelDraw, Adobe Illustrator and open-source software like Inkscape, Introduction to features and tools of CorelDraw/Illustrator/Inkscape, Project - Application of software tools for drawing technical flats on any vector-based computer design software

Unit II: Fabric rendering **(30 hours)**

Unit Description: This unit will help students to develop skills to render the fabrics and silhouettes used in the garment. Students will be taught to imitate fabric textures in their drawing both manually and through computer aided design softwares. In addition, they will also learn to develop their own textile prints and their colour ways.

Topics: Learning to simulate textures of various fabrics manually - cotton, silk, fur, net, leather, velvet, denim, corduroy, georgette, chiffon, knit, crochet, lace, embroidery and prints. Understanding the basics of design repeat and how to create seamless prints manually. Introduction to raster -based editing softwares –Adobe Photoshop and open-source software like GIMP, Photopea etc.
Introduction to features and tools of Photoshop/Photopea/GIMP
Application of software tools for creating seamless patterns.
Project - Application of software tools for designing various textile products with different fabric textures in three different colour schemes
All the above work will be collated as a digital portfolio.

Essential Readings

- Abling, B., (2019). Fashion Sketchbook, Bloomsbury Publication, UK
- Aldrich, W., (1994). CAD in Clothing and Textiles, 2nd Edition, Wiley- Blackwell Publishing, USA
- Jain, S. & Geetha M. (2018). CorelDraw Training Guide, BPB Publications, India
- Lazear.M. Susan, (2007). Adobe Photoshop for Fashion Design, Pearson Publishing
- Callender, J. (2011). 2000 Pattern Collection, Anova Books Company Limited, London.

Suggested Readings

- CorelDraw tutorial: https://www.youtube.com/watch?v=89VZfov7p8Q
- Photoshop tutorial: https://helpx.adobe.com/in/photoshop/tutorials.html
- Shuffle Botham, R., 2014, Photoshop cc, In Easy Steps Limited, UK

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Graphic Designing & Animation

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Graphic Designing & Animation	2	0	0	2	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the students to the skill of animation.
- To learn about the application of 2D and 3D animation.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the importance of animation and graphics design
- After studying this course, students will be able to learn graphics design in 2D and 3D animation.
- After studying this course, students will be able to learn the application of graphics design in 2D and 3D animation in advertising and other areas.

SYLLABUS

Course Contents:

Unit 1: 2D Animation **(30 hours)**

Introduction to 2D Animation: Introduction to 2D Animation, Drawing concept, Colour theory & basics, Incorporating sound into 2D animation

Layout & Designing: Basic of sketching, still life and assignment of basic drawing, Composition of basic elements, Work in different media, such as drawing, collage, and painting, Explore the relationship between elements and principal, Pixel and resolution: Vector and Bitmap Graphics

Graphics and advertising (Practical)

- Creating Digital Layout
- Professional image editing (PHOTOSHOP)
- Advertising and relevant case , Graphics and illustration (Corel Draw, Paint)
- Vector Composition , 2D animation (Macromedia Flash)

Broadcast Design (Practical)

- Working with visual images
- Story Boarding
- Titles and Credit Making
- Stop motion animation

Production / Post-Production (Practical)

- Paint & animate (scanning, tracing, ink & Paint)
- Understanding Background composition
- Basic Understanding of 2D animation and technique
- Animation with flash, Portfolio Making

Unit 2: 3D Animation **(30 hours)**

3D Modeling: Introduction to 3D space in Blender, Introduction to Modeling Techniques, In-organic Modeling, Organic Modeling

3D Shading: Use of Materials & Shader, Shader and Texture Editing, Shading Organic Model, Shading In-Organic Models

3D Animation and Rigging (Practical)

- Introduction to 3D Animation
- Create, Edit and working with Animation Graph, Rigging using Blender
- Setting up controllers for joints
- Simple Skeleton structure with proper joint orientation

3D Lighting and Rendering (Practical)

- Understanding Lighting in Cycles
- Direct and Indirect Lighting
- Light Linking, Final Composition
- Creating composition and Light with the Shaded Models

3D Dynamics (Practical)

- Introduction to Dynamics, Active and Passive Bodies
- Creating basic Simulation and collusion using Rigid body
- Cloth Simulation, Simulation of Brick wall collusion
- Introduction to Fluid Effects, Creating fluid simulation

Project

(Digital Imaging)

- Design Print advertisement for Service
- Design Print advertisement for Product
- Design Print advertisement an Event
- Design Print advertisement on Social Awareness
- Design a collage with a social message

2D Animation

- Drawing fundamentals using lines
- Sketching of cartoon characters
- 2D Logo designing
- Storyboarding of a 30 seconds film
- Portfolio making of an organization

3D Animation

- Exploring the Interface of 3D application & Basic Modeling
- Create different types of Materials and create a Shading
- Create a simple walk cycle using the character rigs
- Create a composition and Light set up
- Create a Fluid simulation & rendering

Suggested Readings:

- The Illusion of Life: Disney Animation, Ollie Johnston and Frank Thomas, Disney Editions.
- Blender Production Creating Short Animations from Start to Finish, Roland Hess, Routledge.
- Animating with Blender: Creating Short Animations from Start to Finish, Roland Hess, Focal Press
- Simplified Drawing for Planning Animation, Wayne Gilbert, Anamie Entertainment Ltd.
- Getting Started in 3D with Maya, Adam Watkins, Routledge.
- Creating Characters with Personality: For Film, TV, Animation, Video Games, and Graphic Novels, Tom Bancroft, Watson-Guptill
- Force: Dynamic Life Drawing for Animators, Mike Mattesi, Focal Press

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Programming using Python

Credit distribution, Eligibility and Prerequisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical / Practice		
Programming using Python	**2**	**0**	**0**	**2**	**Class XII**	**NIL**

Learning Objectives

The Learning Objectives of this course are as follows:

- To provide exposure to basic problem-solving techniques with computers
- To develop logical thinking abilities and to propose novel solutions for real-world problems through programming language constructs.
- To deepen the empirical knowledge on applying programming in business domains.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to interpret the basic representation of the data structures and sequential programming
- After studying this course, students will be able to gain knowledge of, and ability to use control framework terminologies.
- After studying this course, students will be able to work out using the core data structures as lists, dictionaries, tuples, and sets.
- After studying this course, students will be able to choose appropriate programming paradigms, interrupt and handle data using files to propose solutions through reusable modules
- After studying this course, students will be able to propose possible error-handling constructs for unanticipated states/inputs.
- After studying this course, students will be able to implements exemplary applications on real-world problems.

Syllabus

Unit-1: Introduction (**8 hours**)

Relationship between computers and programs, Basic principles of computers, File systems, Using the Python interpreter, Introduction to binary computation, Input / Output

Unit-2: Data types and control structures (**8 hours**)

Operators (unary, arithmetic, etc.), Data types, variables, expressions, and statements, Assignment statements, Strings and string operations, Control Structures: loops and decision

Unit-3: Modularization and Classes (**8 hours**)

Standard modules, Packages, Defining Classes, Defining functions, Functions and arguments (signature)

Unit-4: Data structures and Object-oriented design (**8 hours**)

Data Structures (array, List, Dictionary), Error processing, Exception Raising and Handling Programming types, Object Oriented Programming, Object Oriented Design, Inheritance and Polymorphism

Practical Exercises **(28 hours)**

- Running instructions in Interactive interpreter and a Python Script
- Write a program to purposefully raise Indentation Error and Correct it
- Write a program to compute distance between two points taking input from the user. (Pythagorean Theorem)
- Write a program add.py that takes 2 numbers as command line arguments and prints its sum.
- Write a Program for checking whether the given number is an even number or not.
- Using a for loop, write a program that prints out the decimal equivalents of 1/2, 1/3, 1/4, 1/10
- Write a program using a for loop that loops over a sequence. What is the sequence?
- Write a program using a while loop that asks the user for a number, and prints a countdown from that number to zero.
- Find the sum of all the primes below two million. Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be: 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, …...
- By considering the terms in the Fibonacci sequence whose values do not exceed four million, find the sum of the even-valued terms.
- Write a program to count the numbers of characters in the string and store them in a dictionary data structure.

- Write a program to use split and join methods in the string and trace a birthday with a dictionary data structure.
- Write a program combining lists that combines these lists into a dictionary.
- Write a program to count the frequency of characters in a given file. Can you use character frequency to tell whether the given file is a Python program file, C program file or a text file?
- Write a program to print each line of a file in reverse order.
- Write a program to compute the number of characters, words and lines in a file.
- Write a function ball collide that takes two balls as parameters and computes if they are colliding. Your function should return a Boolean representing whether or not the balls are colliding. Hint: Represent a ball on a plane as a tuple of (x, y, r), r being the radius. If (distance between two balls centers) <= (sum of their radii) then (they are colliding)
- Find mean, median, mode for the given set of numbers in a list.
- Write a function nearly equal to test whether two strings are nearly equal. Two strings a and b are nearly equal when a can be generated by a single mutation on b.
- Write a function dups to find all duplicates in the list.

Essential/recommended readings

- "Starting Out with Python plus My Programming Lab with Pearson eText --Access Card Package (3rd Edition) Tony Gaddis ISBN-13: 978-0133862256".
- Python Crash Course: A Hands-On, Project-Based Introduction to Programming (2nd Edition).
- Head-First Python: A Brain-Friendly Guide (2nd Edition) by Paul Barry.
- Learn Python the Hard Way: 3rd Edition by Zed A. Shaw.
- Python Programming: An Introduction to Computer Science (3rd Edition) by John M. Zelle.
- Python Cookbook: Recipes for Mastering Python 3 (3rd Edition) by Brian Jones and David Beazley.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

DOCUMENT PREPARATION & PRESENTATION SOFTWARE

Credit distribution, Eligibility and Prerequisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Document Preparation & Presentation Software	**2**	**0**	**0**	**2**	**Class XII**	**NIL**

Learning Objectives:

- To develop proficiency in the use of document preparation software such as document LaTeX, LibreOffice.
- To make a presentation using LaTeX, LibreOffice.
- To serve as a tool for conveying/communicating one's ideas, views, and observations.

Learning Outcomes

On completion of the course, a student will be able to

- Create a text document using LaTeX using a standard template.
- Incorporate well-formatted mathematical equations, algorithms, figures, tables and references in a document.
- Use Zotero for reference management.
- Format text, including alignment, emphasis and fonts.
- Handle basic aspects of document structure, including sections, subsections, paragraphs, and bulleted and enumerated lists.
- Page set a document including header, footer, and page numbering.
  Make a presentation.

Syllabus

Practical

Unit 1: Introduction (4 Hours)

1. Create a LaTeX/ LibreOffice document having several paragraphs, including comments in LaTeX.
2. Organize content into sections, including preface/abstract. Using the article and book class of LaTeX. Handling errors.

Unit 2: Styling Pages (6 Hours)

1. Loading and using packages, setting margins, header and footer, and page orientation.
2. Organizing the document into multiple columns

Unit 3: Formatting Content (10 Hours)

1. Formatting text (styles, size, alignment)
2. Adding colours to a block of text/ page
3. Adding ordered and unordered lists
4. Inserting mathematical expressions – subscripts, superscripts, fractions, binomials, aligning equations, operators, Greek and mathematical symbols, and mathematical fonts.

Unit 4: Tables and Figures (10 Hours)

1. Create basic tables
2. Adding different types of borders to a table
3. Merging rows and columns
4. Splitting tables across multiple pages.
5. Incorporating figures and subfigures, explore different properties like rotation and scaling.

Unit 5: Algorithms and Equations (12 hours)

1. Incorporating algorithms, body typesetting, organizing algorithms across multiple pages.
2. Incorporating equations, indentation, and captioning.

Unit 6: Referencing and Indexing (6 hours)

1. Insert captions, labels, and references
2. Incorporate cross-referencing (refer to sections, table, and images)
3. Incorporate a bibliography
4. Create a back index.

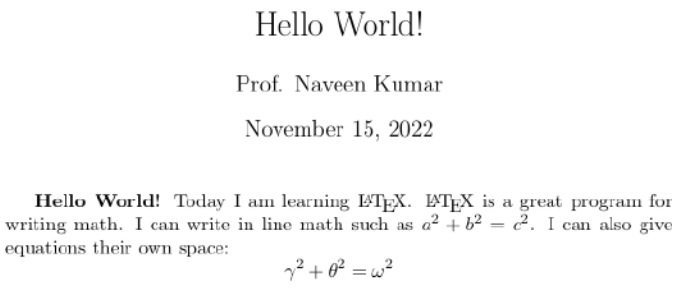
Unit 7: Making Presentations (12 hours)

1. Create a slideshow
2. Incorporate logo
3. Highlight important points
4. Create a title page
5. Make a table of contents
6. Incorporate special effects in a slideshow.

Exercises:

For the following figures, create LaTex documents using concepts from above:

1.



Hello World!

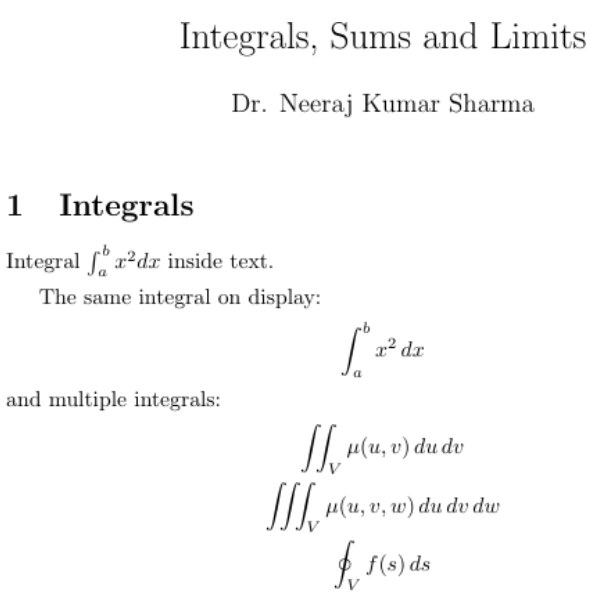
Prof. Naveen Kumar

November 15, 2022

Hello World! Today I am learning LaTeX. LaTeX is a great program for writing math. I can write in line math such as $a^2 + b^2 = c^2$. I can also give equations their own space:

$$\gamma^2 + \theta^2 = \omega^2$$

2.



Integrals, Sums and Limits

Dr. Neeraj Kumar Sharma

1 Integrals

Integral $\int_a^b x^2 dx$ inside text.

The same integral on display:

$$\int_a^b x^2\,dx$$

and multiple integrals:

$$\iint_V \mu(u,v)\,du\,dv$$

$$\iiint_V \mu(u,v,w)\,du\,dv\,dw$$

$$\oint_V f(s)\,ds$$

2 Sums and products

Sum $\sum_{n=1}^{\infty} 2^{-n} = 1$ inside text.

The same sum on display:

$$\sum_{n=1}^{\infty} 2^{-n} = 1$$

Product $\prod_{i=a}^{b} f(i)$ inside text.

The same product on display:

$$\prod_{i=a}^{b} f(i)$$

3 Limits

Limit $\lim_{x\to\infty} f(x)$ inside text.

The same limit on display:

$$\lim_{x\to\infty} f(x)$$

3.

Equations

Prof. Naveen Kumar[1], Dr. Neeraj Kumar Sharma[2], and Sakeena Shahid[3]

[1]Department of Computer Science, University of Delhi
[2]Ram Lal Anand College, University of Delhi
[3]SGTB Khalsa College, University of Delhi

November 15, 2022

1 Maxwell's Equations

"Maxwell's equations" are named for James Clark Maxwell and are as follow:

$$\vec{\nabla} \cdot \vec{E} = \frac{\rho}{\epsilon_0} \quad \text{Gauss's Law} \tag{1}$$

$$\vec{\nabla} \cdot \vec{B} = 0 \quad \text{Gauss's Law for Magnetism} \tag{2}$$

$$\vec{\nabla} \times \vec{E} = -\frac{\partial \vec{B}}{\partial t} \quad \text{Faraday's Law of Induction} \tag{3}$$

$$\vec{\nabla} \times \vec{B} = \mu_0 \left(\epsilon_0 \frac{\partial \vec{E}}{\partial t} + \vec{J} \right) \quad \text{Ampere's Circuital Law} \tag{4}$$

Equations 1, 2, 3, and 4 are some of the most important in Physics.

2 Matrix Equations

$$\begin{pmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{pmatrix} \begin{bmatrix} v_1 \\ v_2 \\ \vdots \\ v_n \end{bmatrix} = \begin{matrix} w_1 \\ w_2 \\ \vdots \\ w_n \end{matrix}$$

4.

List of mathematical functions:

- Trigonometric functions
  - sine
  - cosine
  - tangent
- Special functions
  - Beta function
  - Gamma function
  - Riemann zeta function

5. Add the following algorithm to the document.

Algorithm 1: Example code

```
Input: Your Input
Output: Your output
Data: Testing set x
1  ∑_{i=1}^{∞} := 0                                   // this is a comment
   /* Now this is an if...else conditional loop                          */
2  if Condition 1 then
3      Do something                                   // this is another comment
4      if sub-Condition then
5          Do a lot
6  else if Condition 2 then
7      Do Otherwise
       /* Now this is a for loop                                         */
8      for sequence do
9          loop instructions
10 else
11     Do the rest
   /* Now this is a While loop                                           */
12 while Condition do
13     Do something
```

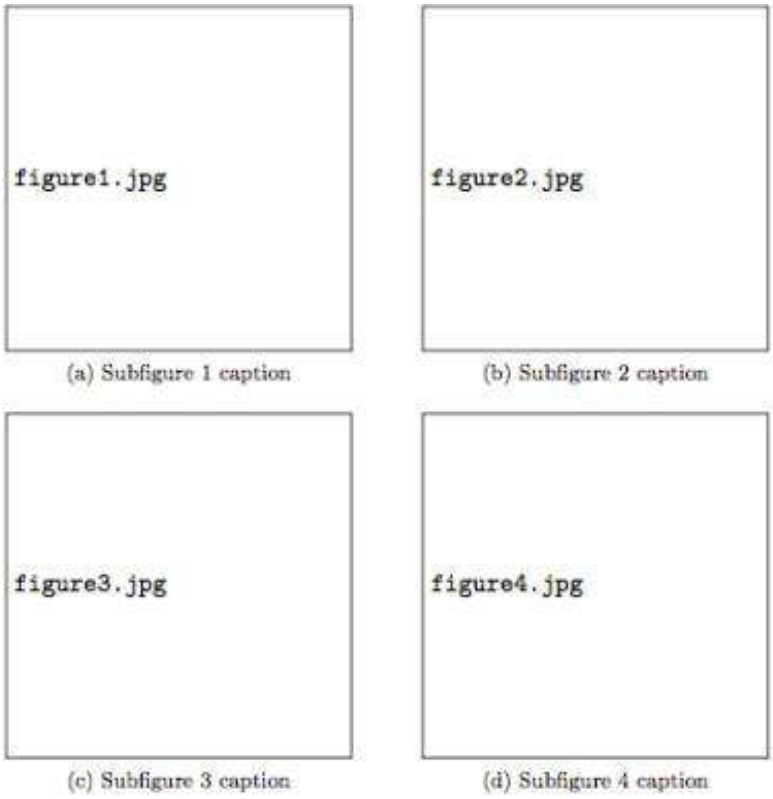
6.

col1	col2	col3
Multiple row	cell2 cell5 cell8	cell3 cell6 cell9

7.

Country List		
Country Name or Area Name	ISO ALPHA 2 Code	ISO ALPHA 3
Afghanistan	AF	AFG
Aland Islands	AX	ALA
Albania	AL	ALB
Algeria	DZ	DZA
American Samoa	AS	ASM
Andorra	AD	AND
Angola	AO	AGO

8. Insert four sub-figures as given below, and add captions. Also, refer to these sub-figures in the text.



(a) Subfigure 1 caption (b) Subfigure 2 caption

(c) Subfigure 3 caption (d) Subfigure 4 caption

Figure 1: This is a figure containing several subfigures.

In the text, you can refer to subfigures of figure 1 as 1a, 1b, 1c and 1d and to the sub-index as (a), (b), (c) and (d).

9. Add a table of contents, a list of figures, and a list of tables in the document as given below.

Contents

Table of contents 1

1 First Section 2

2 Second Section 2

List of Tables

1 Just a table 2

List of Figures

1 This is an image 2

10. Add a list of references in the document as given below and cite them in the text.

This document is an example of `natbib` package using in bibliography management. Three items are cited: *The LaTeX Companion* book [2], the Einstein journal paper Einstein [1], and the Donald Knuth's website [3]. The LaTeX related items are [2, 3].

References

[1] A. Einstein. Zur Elektrodynamik bewegter Körper. (German) [On the electrodynamics of moving bodies]. *Annalen der Physik*, 322(10):891–921, 1905. doi: http://dx.doi.org/10.1002/andp.19053221004.

[2] M. Goossens, F. Mittelbach, and A. Samarin. *The LaTeX Companion*. Addison-Wesley, Reading, Massachusetts, 1993.

[3] D. Knuth. Knuth: Computers and typesetting. URL `http://www-cs-faculty.stanford.edu/~uno/abcde.html`.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Front End Web Design and Development

Credit distribution, Eligibility and Prerequisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Front End Web Design and Development	**2**	**0**	**0**	**2**	**Class XII**	**NIL**

Learning Objectives:

The Learning Objectives of this course are as follows:

- To introduce the basic concepts and techniques of client-side web programming.
- To enable the students to develop simple, interactive, and stylish websites using HTML, CSS and JavaScript.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to build websites using the elements of HTML.
- After studying this course, students will be able to build interactive and stylish websites using client-side programming techniques with CSS and Javascript.
- After studying this course, students will be able to learn to validate client-side data.
- After studying this course, students will be able to define the structure and contents of the website using different features of CSS.

SYLLABUS

Unit-1: Introduction **(8 hours)**

Introduction: Introduction to internet and web design. Basic concepts of web architecture.

Unit-2: HTML **(8 hours)**

Introduction to hypertext mark-up language (html), creating web pages, lists, hyperlinks, tables, web forms, inserting images, frames.

Unit-3: Cascading style sheet (CSS) **(8 hours)**

Concept of CSS, creating style sheet, Importing style sheets, CSS properties, CSS styling (background, text format, controlling fonts), CSS rules, Style Types, CSS Selectors, CSS cascade, working with block

elements and objects, working with lists and tables, CSS id and class, box model (introduction, border properties, padding properties,
margin properties).

Unit-4: Basics of Javascript (8 hours)

Document object model, data types and variables, functions, methods and events, controlling program flow, built-in objects and operators, validations.

Practical Exercise (28 hours)

HTML

- Create an HTML document with following formatting – Bold, Italics, Underline, Colors, Headings, Title, Font and Font Width, Background, Paragraph, Line Brakes, Horizontal Line, Blinking text as well as marquee text.
- Create an HTML document with Ordered and Unordered lists, Inserting Images, Internal and External linking
- Create an HTML document for displaying the current semester's timetable.
- Create a website with horizontal and vertical frames. Top horizontal frame needs to show your college's name and logo. Bottom horizontal frame is to be split into two vertical frames. The left frame has hyperlinks to pages related to faculty, courses, student activities, etc. The right frame shows the corresponding webpage based on the link clicked on the left frame.
- Create a student registration form using HTML which has the following controls and make an interactive content presentation using CSS.:

  I. Text Box II. Dropdown box III. Option/radio buttons

  IV. Check boxes V. Reset and Submit button

- Create a webpage for your department with a drop-down navigation menu for faculty, courses, activities, etc.. Implement the webpage using styles, rules, selectors etc. learned in CSS
- Write event-driven programs in JavaScript for the following:
  - Enter a number and on click of a button print its multiplication table.
  - Print the largest of three numbers entered by the user.
  - Find the factorial of a number entered by the user.
  - Enter a list of positive numbers using the prompt terminated by a zero. Find thesum and average of these numbers.
- Create a student registration form using text, radio button, check box, drop down box, text field and all other required HTML elements. Customize the CSS and javascript to input and validate all data. Create functions to perform validation of each element, example:
  - Roll number is a 7-digit numeric value
  - Name should be an alphabetical value (String)
  - Non-empty and valid fields like DOB

Essential/recommended readings

- Nixon, R., Learning PHP, MySQL & JavaScript with jQuery, CSS and HTML5, O'Reilly, 2018.
- Powell, T.A. HTML & CSS: The Complete Reference, 5th edition, Tata McGrawHill, 2017.
- Duckett, J., JavaScript and JQuery: Interactive Front-End Web Development, Wiley, 2014.

Suggested Readings

- Boehm, A., & Ruvalcaba, Z., Murach's HTML5 and CCS, 4th edition, Mike Murach & Associates, 2018.
- Ivan Bayross, Web Enabled Commercial Application Development Using Html, Dhtml, Javascript, Perl CGI, BPB Publications, 2010.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Back-End Web Development

Credit distribution, Eligibility and Prerequisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Back-End Web Development	**2**	**0**	**0**	**2**	**Class XII**	**NIL**

Learning Objectives:

The Learning Objectives of this course are as follows:

- To introduce the basic concepts and techniques of server-side web programming.
- To enable the students to apply the basic concepts and techniques of server-side web programming.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to build interactive and dynamic websites.
- After studying this course, students will be able to write the server side programming techniques with Django for accessing the contents to/from the server
- After studying this course, students will be able to learn to validate server-side/backend data
- After studying this course, students will be able to use GET and POST methods for sending data within client and server.

SYLLABUS

Unit-1 **(15 hours)**

Installation of Django, Introduction to Django; Model–view–controller(MVC) model; Django structure; HTML templates; URL dispatcher, Django Template System, Interacting with a Database

Unit-2 **(15 hours)**

The Django Administration Site , Wrapper Functions, Custom Views GET and POST methods;Deployment of Django; Automating tasks with Django; Building Web APIs using Django REST

Project Work **(30 hours)**

Build a website for student admission in a college/university.

Essential/recommended readings

https://docs.djangoproject.com/

Examination scheme and mode:
Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

APP Development using Flutter

Credit distribution, Eligibility and Prerequisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
APP Development using Flutter	**2**	**0**	**0**	**2**	**Class XII**	**Basic knowledge of Python programming language is preferred.**

Learning Objectives:

The Learning Objectives of this course are as follows:

- To enable the students for developing simple mobile applications that can run on Android, IOS and Web.
- To learn the fundamentals of Flutter platform.
- To enable the students to write cross-platform applications.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to Install and use flutter
- After studying this course, students will be able to use DART language
- After studying this course, students will be able to build a cross-platform AP
- After studying this course, students will be able to deploy application with single codebase.

Syllabus

Unit-1 **(8 hours)**

Introduction to Flutter, Flutter – installation, Widgets, Gestures(Title, Body, Columns, Root, Run app)

Unit-2 **(8 hours)**

State Management, Flutter – Introduction To Package, Build method, Dart packages, app bar, text widgets, Scaffold, Containers, Structuring flutter apps, Using GitHub repos of flutter

Unit-3 **(8 hours)**

Flutter – Accessing Rest API, Database Concepts, Testing (Widget Testing).

Unit-4 **(8 hours)**

Deployment (Android Application On Play Store, IOS Application On APP Store)

Practical Exercises **(28 hours)**

- Build a simple quiz app in flutter for android, ios, and web.
- Build a cross-platform app based on your own idea. Use as many features of flutter as you can.

Essential/recommended readings

https://docs.flutter.dev/

https://github.com/flutter

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Big Data Analytics - I

Credit Distribution, Eligibility and Pre-Requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical / Practice		
Big Data Analytics-I	**2**	**1**	**0**	**1**	**Class XII**	**Basic knowledge programming language (preferably Java), Shell scripting, SQL Query**

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the Big Data platform and its uses.
- Provide an overview of Apache Hadoop.
- Provide HDFS concepts and Interfacing with HDFS.
- Provide an overview of Map Reduce Programming.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to identify Big Data and its Business Implications.
- After studying this course, students will be able to list the components of Hadoop and Hadoop Eco-Systems.
- After studying this course, students will be able to access and process data on distributed file system.
- After studying this course, students will be able to manage job execution in Hadoop environment.

Syllabus:

Unit-1: Understanding Big Data **(2 hours)**

Data Storage and Analysis-The process of data analysis, Characteristics of Big Data, Big Data Analytics, Typical Analytical Architecture, Requirement for new analytical architecture, Challenges in Big Data Analytics – Need of big data frameworks

Unit-2: Foundations of Big Data Systems (4 hours)

Getting started with Hadoop, Requirement of Hadoop Framework, Design principle of Hadoop –Comparison with other system, Understanding Hadoop Ecosystem: Hadoop Components – Hadoop 1 vs Hadoop 2

Unit-3: HDFS (Hadoop Distributed File System) (4 hours)

The Design of HDFS, Hadoop Daemon's – HDFS Commands, HDFS Concepts, Command Line Interface, Hadoop file system interfaces-Loading data into HDFS, read/write process to HDFS

Unit-4: Introduction to Parallel Programming with Map Reduce (5 hours)

Map Reduce Programming: I/O formats, Map side join, Reduce Side Join, Secondary sorting, Pipelining Map Reduce jobs (Map Reduce Execution Pipeline)- Map, Shuffle and Sort, Reduce

Practical Exercises (30 hours)

- Downloading and installing Hadoop.
- Understanding different Hadoop modes. Startup scripts, Configuration files.
- Hadoop Implementation of file management tasks, such as Adding files and directories, retrieving files and Deleting files.
- Run a basic word count Map reduce program to understand map reduce paradigm: To count words in a given file, to view the output file, and to calculate the execution time.
- Map Reduce Program to analyse time-temperature statistics and generate report with max/min temperature.

Essential/recommended readings

- Seema Acharya, Subhasini Chellappan, "Big Data Analytics" Wiley 2015.
- Tom White, "Hadoop: The Defective Guide", O'Reilly, 4th Edition, 2015.
- Donald Miner, Adam Shook, "Map Reduce Design Pattern", O'Reilly, 2012.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Big Data Analytics - II

Credit Distribution, Eligibility and Pre-Requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Big Data Analytics-II	**2**	**1**	**0**	**1**	**Class XII**	**Big Data Analytics-I**

Learning Objectives

The Learning Objectives of this course are as follows:

- Provide hands-on Hadoop Eco System.
- Provide an overview of Apache Spark.
- To understand Machine Learning with Big Data.
- Provide an overview of GPU Computing.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to develop Big Data Solutions using Hadoop Eco System.
- After studying this course, students will be able to use Spark for the effective analysis of the Big Data.
- After studying this course, students will be able to use Machine Learning Techniques with Big Data.
- After studying this course, students will be able to use GPU Computing for parallel computations.

Syllabus:

Unit-1: Big Data Systems- The Advances (3 hours)

Data flow, Data Ingest with Flume and Scoop and Hadoop archives, Hadoop I/O: Compression, Serialization, Avro and File-Based Data structures.

Unit-2: Introduction to Apache Spark (3 hours)

Introduction, Architecture of Spark, Resilient Distributed Datasets, Spark Transformations, Writing Spark Application - Spark Programming in Scala, Python, R, Java - Application Execution

Unit-3: Machine Learning with Big Data (3 hours)

Introduction to machine learning, Supervised vs Unsupervised learning, Cluster analysis, understanding k means clustering, Implementation of k means clustering with Map Reduce.

Unit-4: Introduction to GPU Computing (6 hours)

Introduction to GPU Computing, CUDA Programming Model, CUDA API, Simple Matrix, Multiplication in CUDA, CUDA Memory Model, Shared Memory Matrix Multiplication, Additional CUDA API Features.

Practical Exercises (30 hours)

- Implementation of Matrix Multiplication with Hadoop Map Reduce.
- Implementation of K-means clustering using Map Reduce.
- To study and implement basic functions and commands in R/Python programming.
- To build Word cloud, a text mining method using R/Python for easy to understand and visualization than a table data.
- To implement clustering program using R/Python programming

Essential/recommended readings

- Seema Acharya, Subhasini Chellappan, "Big Data Analytics" Wiley 2015.
- Mike Frampton, "Mastering Apache Spark", Packt Publishing, 2015.
- Tom White, "Hadoop: The Defective Guide", O'Reilly, 4th Edition, 2015.
- Nick Pentreath, Machine Learning with Spark, Packt Publishing, 2015.
- Mohammed Guller, Big Data Analytics with Spark, Apress, 2015.
- Donald Miner, Adam Shook, "Map Reduce Design Pattern", O'Reilly, 2012.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Introduction to Blockchain

Credit Distribution, Eligibility and Pre-Requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Blockchain	**2**	**0**	**0**	**2**	**Class XII**	**NIL**

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the students to the basic concept of blockchain.
- To make the students learn and implement blockchain technology.
- To learn about distributed organizations and distributed ledger.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand how Ethereum transactions are validated by miners.
- After studying this course, students will be able to understand Ethereum Blockchain.
- After studying this course, students will be able to learn Solidity programming language to develop Smart Contracts.
- After studying this course, students will be able to understand the key concepts like cryptography and public , private blockchain.
- After studying this course, students will be able to gain a deep insight into Ethereum, Hyperledger and its network.

Syllabus:

Practical

Unit-1 **(16 hours)**

Blockchain: Basics And Applications: Node Fundamentals, Blockchain Basics, Blockchain Features, Ethereum Fundamentals, Smart Contract Development In Ethereum, Dapp Development In Ethereum.

Building A Distributed Application On Hyperledger Fabric:

Hyperledger Fundamentals,

Unit-2 **(16 hours)**

Fabric Network Setup, Chaincode Development,DAPP Development.

CAPSTONE PROJECT **(28 hours)**

- Assignment/Project

Suggested Web links

https://ethereum.org
https://www.hyperledger.org/

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Introduction to Cloud Computing (AWS)

Credit Distribution, Eligibility and Pre-Requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Cloud Computing (AWS)	**2**	**0**	**0**	**2**	**Class XII**	**NIL**

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn about cloud computing through Amazon Web Services (AWS) platform.
- To learn about AWS cloud concepts, services, security and architecture to build an application.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to Understanding cloud computing platform
- After studying this course, students will be able to differentiate between on-premises, hybrid-cloud, and all-in cloud
- After studying this course, students will be able to describe the basic global infrastructure of the AWS Cloud
- After studying this course, students will be able to understanding the core AWS services, including compute, network, databases, and storage

Syllabus:

Practical

Unit-1 **(12 hours)**

Introduction to cloud computing, Creating AWS account, AWS Management Console, AWS Documentation overview, Availability Zones, AWS Global Infrastructure.

Unit-2 **(10 hours)**

Compute in the Cloud :- Amazon EC2, instance types.

Unit-3 **(10 hours)**

Storage and Databases: - Amazon Simple Storage Service (Amazon S3), Amazon Relational Database Service (Amazon RDS), Amazon DynamoDB.

PROJECT **(28 hours)**

- Create an AWS account and implement AWS cloud for deploying any application.

Suggested Web links

https://aws.amazon.com

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Biofertilizers

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution of The Course			Eligibility Criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Biofertilizers	**2**	**0**	0	**2**	Class XII	NA

Learning objectives:

To help the students understand:

- the concept of biofertilizers and develop the skills for handling microbial inoculants.
- the growth and multiplication conditions of useful microbes and their role in mineral cycling and nutrition to plants.
- various methods of decomposition of biodegradable waste and their conversion to compost.

Learning outcomes:

After completion of this course, the learners will be able to:

- describe the different methods of composting.
- assess quality of compost and its role in soil nutrition.
- apply methods of bio-control
- develop a composting unit for production of biofertilizers (generate employment)

SYLLABUS

Practical: **60 hours**

1. Introduction to rhizobial symbiosis - Study of *Rhizobium* and its isolation from root nodules of leguminous plants by Gram staining method. 4 hours
2. Study of different bio-composting methods (microbes and earthworm). 8 hours
3. Compost quality assessment and its role in soil nutrition - Test for pH, NO^{3-}, $SO4^{2-}$, Cl^{-} and organic matter of different composts. 8 hours
4. Introduction to Arbuscular mycorrhiza - Study of arbuscular mycorrhizal fungi from plant roots by staining methods. 4 hours
5. Isolation of arbuscular mycorrhizal spores from rhizosphere soil. 4 hours

6. Study structure of *Anabaena and Azolla* structure - Isolation of *Anabaena* from *Azolla* leaf. 4 hours
7. Study various biocontrol methods and their application Pheromone trap, *Trichoderma*, *Pseudomonas*, Neem etc. 4 hours
8. Projects on any one of the following topics: *Rhizobium* technology, AMF technology, Organic farming, Bio composting, Vermicomposting, *Azolla* culture etc. The design of the project should be such that it includes a continuous work of at least 6 weeks and a dissertation submission/ presentation/ CE - continuous evaluation. 24 hours

Essential Readings:

1. Kumaresan, V. (2005). *Biotechnology.* New Delhi, Delhi: Saras Publication.
2. Sathe, T.V. (2004). *Vermiculture and Organic Farming.* New Delhi, Delhi: Daya publishers.
3. Subha Rao, N.S. (2000). *Soil Microbiology.* New Delhi, Delhi: Oxford & IBH Publishers.
4. Khosla, R. (2017). Biofertilizers and Biocontrol Agents for Organic Farming Kojo Press.

Suggestive Readings:

1. Azotobacter - Isolation and characterization -- https://youtu.be/1Z1VhgJ2h6U
2. Rhizobium -- Identification and characterization - https://youtu.be/jELlo-pMvc4.
3. 3-Days Online Workshop On Arbuscular Mycorrhizal Fungi_ Biodiversity, Taxonomy and Propagation 19-2 (2022-01-20 at 02_27 GMT-8) – https://youtu.be/LKzK4IuSRc4
4. Vayas,S.C, Vayas, S., Modi, H.A. (1998). Bio-fertilizers and organic Farming. Nadiad, Gujarat: Akta Prakashan.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Bioinoculants for Agriculture and Sustainable Development

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Bioinoculants for Agriculture and Sustainable Development	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

- To make students aware of the role of microorganisms in sustainable development and remediation.
- To develop their own biofertilizers and other kinds of bio-inoculants for use in agriculture and environment.
- Skill development in initiating a bioinoculant-based low cost startup.

Learning outcomes

After studying this course, the students will be:

- Able to identify the role of microbes in sustainable development and how microbes can be used in remediation of damaged environments.
- Skilled in isolating microorganisms from a variety of different sites. Will learn Selection, purification and preservation of useful cultures.
- Skilled in formulating bioinoculants and test its efficacy.

SYLLABUS

Practical **60 hours**

Unit 1: Introduction and scope of bioinoculants **20 hours**

Biofertilizers: success story – biofertilizer production under ICAR - How Biofertilizers for Corn Went Commercial. Biopesticides: success story of using biopesticides for nematode management in horticultural crops. Bioinoculants as a solution to the problem of parali (stubble) burning: case study of "PUSA Decomposer". Bioinoculants for reforestation. Bioinoculants for the reclamation of waste lands having alkaline, acidic, heavy metal-contaminated soils. Bioinoculants for clearance of oil spills. Mycorrhizal inoculants. Some important commercially available bioinoculants.

Unit 2: Isolation of microorganisms for the preparation of bioinoculants **28 hours**

Isolation of phosphate solubilizers, free-living nitrogen fixers, heavy metal-accumulating microbes, alkalophiles, acidophiles from suitable soil samples. Observation of colony

morphology and microscopic structure of selected microbes and preservation of these cultures in slants and glycerol stocks.

Unit 3: Formulation of bioinoculant using selected microbes (student group project)
12 hours

Culturing of selected microbes from those isolated, and formulating them into a bioinoculant. Preparation of workflow for evaluating efficacy in potted plants and in fields, for determining shelf life, and stability.

Essential/Recommended readings

1. Microbiology: A Lab Manual by J. G. Cappuccino and C. T. Welson. 12th edition.
2. Pearson. 2020.
3. Bio-inoculants as prospective inputs for achieving sustainability: Indian Story by C. Gupta et al. Economic Affairs. Vol. 65, No. 1, pp. 31-41. 2020.
4. Bioinoculants for bioremediation applications and disease resistance: Innovative Perspectives by T. Chaudhary and P. Shukla. Indian J Microbiol. 59 (2): 129–136. 2019.
5. Remediation of metalliferous soils through the heavy metal resistant plant growth promoting bacteria: paradigms and prospects by M. Ahemad. Arabian Journal of Chemistry, 12 (7);1365-1377. 2019.
6. Laboratory manual of Microbiology and Biotechnology by K.R. Aneja. 2nd edition. Scientific International Pvt. Ltd., Delhi. 2018.
7. Online resource: https://www.jaivikkheti.in/DMS/Waste-Decomposer%20Book-Eng.pdf
8. Online resource: https://www.iihr.res.in/success-story-using-biopesticides-nematode-management-horticultural-crops.
9. Biofertilizer Production under ICAR All India Network Project on Soil Biodiversity Biofertilizers DOI: 10.13140/RG.2.2.26840.42244
10. Online resource: https://blog.teamtrade.cz/the-story-of-how-biofertilizers-for-corn-went-commercial-part-one/
11. Online resource: https://en.wikipedia.org/wiki/Microbial_inoculant

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Organic Farming

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution of The Course			Eligibility Criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Organic arming	**2**	**0**	0	**2**	Class XII	NA

Learning objectives:

- To create awareness among the students about organic farming and its importance in sustainable agriculture.
- To provide a skill set of Organic farming to students to help them become self-reliant.

Learning Outcomes:

After completion of this course the learners will be able to:

- practice organic farming along with application of indigenous knowledge.
- establish entrepreneurial ventures and generate employment (Organic Grower).
- evaluate the organic produce as per FSSAI standards (Government rules).

SYLLABUS

Practical: **60 hours**

1. Study of Organic Farming as an integrated approach. 4 hours
2. Soil analysis-physical testing and assessment of soil types, weighment, water movement, soil conditioners, etc. 8 hours
3. Manure preparation and introduction to compost, composting and its value addition quality test. 4 hours
4. Study of Indigenous Technology Knowledge (ITK) for nutrient, insect, pest disease and weed management. 8 hours
5. Study of various agriculturally useful Biofertilizers. 4 hours
6. Biocontrol agents including Integrated Pest Management. 4 hours
7. Study of traditional organic input preparation/formulation of Biofertilizer, biopesticides, plant health promoters like *Panchgavya, Beejamrut* etc. 8 hours
8. Study of the system of organic certification and inspection. 4 hours

9. Branding of rural products, FSSAI, marketing, packaging and handling of organic produce. 4 hours
10. Current Government schemes related to organic farming. 4 hours
11. Visit organic farms to study the various components and their utilization. 8 hours

Essential Readings:

1. Dhama, A.K. (2014). Organic Farming for Sustainable Agriculture (2nd edition), Agrobios (India), Jodhpur.
2. Sharma, Arun K. (2013). A Handbook of Organic Farming, Agrobios (India), Jodhpur
3. Palaniappan, S.P. and Anandurai, K. (1999). Organic Farming – Theory and Practice. Scientific Pub. Jodhpur
4. Thapa, U and Tripathy, P. (2006). Organic Farming in India, Problems and prospects, Agritech, Publising Academy, Udaipur.
5. Jaivik Kheti Sahayak Pustika- National Centre for Organic and Natural Farming, Department of Agriculture & Farmers Welfare, GoI.

Suggestive Readings:

1. National Program for Organic Production-APEDA, Ministry of Commerce & Industry, GoI.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Horticulture

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution Of The Course			Eligibility Criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Horticulture	**2**	**0**	0	**2**	Class XII	NA

Learning objectives

- To acquaint students with the basic, principles, concepts and importance of Horticulture
- To train students in lawn designing, species selection for lawns, parks, home gardens and terrace gardens.
- To provide information about the employment and business opportunities and other avenues in the horticulture sector

Learning Outcomes

After completion of the course, learners will be able to:

- design gardens and learn the art of landscape design.
- describe and implement methods of preparing soil, cultivation and propagation for growing hedges, climbers, vegetables, and fruit yielding plants
- create and maintain nurseries, green houses and implement innovative practices in maintenance, harvesting and storage of horticultural produce.
- apply the skills for enhancing the job opportunities (Horticulturist) as well as self-employment.

SYLLABUS

Practical: **60 hours**

1. Introduction to Horticulture; Garden tools and safety. 4 hours
2. Lawn making and lawn care: recognizing soils and drainage systems, types of grasses. 4 hours
3. Choosing the appropriate plants (species selection) for plantation in different seasons and locations (Outdoor, roof-top, balcony, rock gardens); Flowering annuals, herbaceous

perennials, vines and climbers, ornamental trees, bulbous and foliage plants, cacti and succulents. 4 hours

4. Vegetable Garden: Sowing, raising seedlings, transplantation methods; choosing the right vegetables for the season. 4 hours
5. Seed germination, viability tests and comparison of other parameters of seeds (stored from different years/different temperatures). 4 hours
6. Weeding, manuring, and irrigation methods used in lawns, parks, and vegetable gardens. 4 hours
7. Propagation and plant care: propagation by layering, cutting and other methods. 4 hours
8. Pruning: pruning roses, shrubs, and trees. 4 hours
9. Supporting plants: bamboos, strings, and enclosures. 4 hours
10. Maintenance and care of lawns and gardens: understanding diseases caused by pests and pathogens; protecting garden plants from infections, treating the plants with organic and biopesticides. 4 hours
11. Bonsais: Art and craft. 4 hours
12. One week internship on field or in a company/organisation (Landscape Design) that shall be facilitated by the college and report to be submitted. 8 hours
13. Methods and plantation approaches in various garden designs: Japanese, Mughal, Buddhist, English and Indian Gardens. 4 hours
14. Enhancing beauty of a garden using flowering plants, Garden walls, Fencing, Steps, Hedge, Edging, Lawn, Flower beds, Borders, aquatic garden with flowers; Case studies: Some selected gardens of India. 4 hours

Essential Readings:

1. Edmondson, J.L., Cunningham, H., Densley Tingley, D.O. et al. (2020). The hidden potential of urban horticulture. Nat Food **1,** 155–159.
2. Musser E., Andres. (2005). Fundamentals of Horticulture. New Delhi, Delhi: McGraw Hill Book Co. 2.
3. Sandhu, M.K. (1989). Plant Propagation. Madras, Bangalore: Wile Eastern Ltd.
4. Bird, C. (Ed.). (2014). The fundamentals of horticulture: Theory and practice. Cambridge University Press.
5. The Practical Gardener (1994). Reader's Digest Special Volume.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Floriculture

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution Of The Course			Eligibility Criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Floriculture	**2**	**0**	0	**2**	Class XII	NA

Learning Objectives

- To acquaint students with the basic principles and importance of Floriculture.
- To teach students about flowering plants that can be grown in different seasons in Delhi-NCR.
- To make students aware about exotic flowering plants of ornamental value and their propagation in laboratories and greenhouses.
- To provide information about employment, business opportunities and other avenues in the Floriculture sector (Floriculturist).

Learning Outcomes

After completion of this course learners will be able to:

- identify and describe the ornamental flowering plants in Delhi-NCR.
- practice the methods of preparing soil and water, cultivation and propagation methods.
- design, prepare and apply appropriate combinations of plants and methods of cultivation for commercial setup.
- adapt to the job role of Floriculturist (employment/ entrepreneurship)

SYLLABUS

Practical: **60 hours**

1. Introduction to floriculture, tools and equipments. 4 hours
2. Study of diversity in shape, size, and colour of flowers (including basic botany, nomenclature, common name and general uses). 4 hours
3. Identification and preparation of an inventory of herbaceous flowering plants, climbers, shrubs, and trees around the campus. 4 hours
4. Study the various physico-chemical soil properties for understanding different soils/soil-types. 8 hours
5. Methods of preparation of floral beds, soil preparation, greenhouse design and fumigation methods. 8 hours
6. Methods of seed sowing and raising flowering plants through seeds, bulbs and

through vegetative methods in planters, containers and in outdoor environments. Role of light, plant growth regulators and nutrients in blooming and flowering. 8 hours

7. Bacterial and fungal diseases and pests of ornamental flowers and their management. 4 hours
8. Interior decoration methods, flower arrangements (Japanese, Western and Indian). 4 hours
9. Harvesting, methods to increase the shelf life of flowers, post-harvest care and marketing platforms for the floriculture industry. 8 hours
10. Field visit to nearby nursery/garden to understand basic aspects of Garden design. 4 hours
11. Project Report on any five flowering plants that are grown commercially, their share in the global market, methods used for selling the products and importance of the floriculture industry in job creation. 4 hours

Essential Readings:

1. Randhawa, G.S., Mukhopadhyay, A. (1986). Floriculture in India. New York, NY: Allied Publishers.
2. Larson, R. A. (Ed.). (2012). Introduction to floriculture. Elsevier.

Suggestive Readings:

1. Pal, S. L. (2019). Role of plant growth regulators in floriculture: An overview. J. Pharmacogn. Phytochem, 8, 789-796.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Hydroponic and Aeroponic Farming

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution of The Course			Eligibility Criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Hydroponic and Aeroponic Farming	**2**	**0**	0	**2**	Class XII	NA

Learning objectives:

- The objective of the course is to provide hands-on experience to students on various aspects of hydroponics and aeroponics.
- To make students self-reliant and employable by providing the necessary knowledge and experience to establish hydroponic and aeroponic systems.

Learning Outcomes:

After completing the course, learners will be able to:

- develop basic hydroponics and aeroponics facilities at any given location (pilot scale and/or industrial scale).
- devise and implement a strategy for marketing of the product.
- apply the knowledge to fulfill certification rules and various government policies.
- establish themselves as entrepreneurs (Hydroponic cultivator).

SYLLABUS

Practical: **60 hours**

1. Study of techniques used in hydroponics (Circulating methods such as Nutrient Film Technique (NFT), Deep Flow Technique (DFT), Dutch bucket; Non circulating methods such as Root dipping, Floating, Capillary action; Aeroponics such as root mist and fog feed techniques). 8 hours
2. Study of various instruments used in hydroponics (Pressure gauge, Filters, PVC Tanks, Venturi/Reciprocating Pump/Mixing tank, EC meter, pH meter, TDS meter, water pump, net cups, air pump, thermometer, lux meter, drip irrigation system. 8 hours
3. Construction of sustainable hydroponic and aeroponic units (including greenhouse facilities) 8 hours

4. Preparation of growth media for Hydroponics. 4 hours
5. Estimation of NPK, DO, TDS, pH of growth media. 4 hours
6. Study of suitable conditions for Hydroponics-quality, light intensity, photoperiod and temperature. 4 hours
7. Growing a leafy vegetable/fruity vegetable/medicinal herb /aromatic plant in Hydroponics /Aeroponic solution. 16 hours
8. Study of safety measures, certification standards and government policies. 4 hours
9. Visit to Hydroponic/Aquaculture/Aeroponic farm/Institute. 4 hours

Essential Readings:

1. Meier Schwarz. (1995). Soilless Culture Management. Advanced Series in Agricultural Sciences, vol 24.Springer, Berlin.

2. Hasan, M.; Sabir, N.; Singh, A.K.; Singh, M.C.; Patel, N.; Khanna, M.; Rai, T.; and Pragnya, P. (2018). Hydroponics Technology for Horticultural Crops, Tech. Bull. TB-ICN 188/2018.Publ. by I.A.R.I., New Delhi.

3. Misra, R.L., Misra S. (2017). Soilless Crop production. Daya Publishing House, Astral

Suggestive Readings:

1. Goddek, S., Joyce, A., Kotzen, B., Burnell, G.M. (2019). Aquaponics Food Production Systems.Springer, Cham.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Green Belt Development for Smart Cities

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution Of The Course			Eligibility Criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Green Belt Development for Smart Cities	**2**	**0**	0	**2**	Class XII	NA

Learning objectives:

- To introduce students with one of the key green skill development programs under the Skill India mission by the Government of India.
- To acquaint students with various methods and techniques used in development of green infrastructure for smart cities

Learning Outcomes:

After completion of the course, students will be able to:

- measure factors (biotic and abiotic) contributing to sustainable, healthy environment.
- Assess, describe and use the appropriate plants for restoring polluted environment.
- use their skills enhancing for green infrastructure development (UN-SDG).

SYLLABUS

Practical: **60 hours**

1. Methods of vegetation sampling and calculation of importance value index 4 hours
2. Measuring Tree Basal Area, Height and Canopy Cover to estimate green cover of an area. 8 hours
3. Understanding of Instruments for measuring microclimatic variables *viz*., light, wind, temperature, humidity and precipitation 4 hours
4. Estimation of Total Carbon stock of an area. 8 hours
5. Understanding methods for selection of plants according to pollutant load of both air and water (includes field survey) 4 hours

6. Assessing air pollution tolerance of plant species using APTI (Air pollution tolerance index). 8 hours
7. Use Open Source Softwares for mapping the GPS points and generating a cover map. 4 hours
8. Measurement of Dissolved Oxygen (DO) from treated wastewater. 8 hours
9. Measurement of BOD and TDS from tank and treated pond. 8 hours
10. Determination of total dissolved and suspended solids in water. 4 hours

Essential Readings:

1. Bell, J. R., Wheater, C. P., Cook, P. A., Bell, J. R., Wheater, C. P., Cook, P. A. (2011). Practical Field Ecology: A Project Guide. United Kingdom: Wiley.
2. Singh J.S., Singh S.P. & Gupta S.R. · 2014. Ecology, Environmental Science & Conservation. (2014). India: S. Chand Pvt. Limited.
3. Measurements for Estimation of Carbon Stocksin Afforestation and Reforestation Project Activities under the Clean Development Mechanism, Afield Manual UNFCCC.
4. Slingsby, D., Cook, C., Slingsby, D., Cook, C. (2016). Practical Ecology. United Kingdom: Macmillan Education UK.
5. Mukerji, K. G. (2013). Laboratory Manual of Food Microbiology. India: I.K. International Publishing House Pvt. Limited.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Nursery, Gardening and Landscaping

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution Of The Course			Eligibility Criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Nursery, Gardening and Landscaping	**2**	**0**	0	**2**	Class XII	NA

Learning objectives

The program is aimed to teach students the basic knowledge required to develop entrepreneurship skills in the development of Nursery, Gardening and Landscaping. This course would train students to initiate a remunerative enterprise owing to a high demand of skilled professionals in this field.

Learning Outcomes

After completing this course, the learners will be able to:

- describe and differentiate between the types of gardens.
- practice different methods for propagation of plants.
- execute several nursery and gardening operations.
- assess growing conditions of different horticultural plants, their general requirements and understand their role in landscaping.

SYLLABUS

Practical: **60 hours**

1. Methods of preparation of nursery beds and sowing of seeds. Media for propagation of plants in Nursery Beds, Pots and Mist chamber. 12 hours
2. Study and practice of different propagation methods *viz*., cutting, layering, division, grafting and budding. 4 hours
3. Introduction and practicing Bonsai training, pruning and wiring. 4 hours
4. Study of different types of gardens (indoor and outdoor) and key features of gardens (Paths & Avenues, Hedges & Edges, Lawn, Flowerbeds, Arches & Pergolas, Fencing, Water bodies, Rock garden). 8 hours

5. Methods for selection and enlisting of suitable plants for different locations and in different types of gardens. 4 hours
6. Identification of key horticultural plants, Herbs including different types of grasses – foliage and flowering, Shrubs including hedge plants - foliage and flowering, Avenue trees – foliage and flowering, Climbers, Lianas, Epiphytes, Creepers, Trailers, Aquatic plants, Succulents, Weeds. 8 hours
7. Study of important gardens of India (any five). 4 hours
8. Methods of Landscape designing of Residential areas and Public Gardens, Aquatic Garden, Rock Garden, Industrial gardens. 4 hours
9. Concept and Application of Computer aided Designing (CAD) for landscape designing/ Preparation of landscape designs for school and college using CAD technology. 8 hours
10. Demonstration of different composting methods for Biofertilizers. 4 hours

Essential Readings:

1. A handbook of Landscape: CPWD
2. Gopalaswamiengar, K. S., Parthasarathy, G., Mukundan, P. (1991). Complete Gardening in India. India: Gopalaswamy Parthasarathy, 'Srinivasa'.
3. Hartmann, H. T., Kester, D. E., Hartmann, H. T., Kester, D. E. (1975). Plant Propagation: Principles and Practices. India: Prentice-Hall.
4. Roy, R. K., Roy, R. K. (2013). Fundamentals of Garden Designing: A Colour Encyclopedia. India: New India Publishing Agency.
5. Littlepage, R., Littlepage, R. (2017). Fundamentals of Garden Design: An Introduction to Landscape Design. (n.p.): CreateSpace Independent Publishing Platform.

Suggestive reading:

1. Hodge, G., Hodge, G. (2014). Practical Botany for Gardeners: Over 3,000 Botanical Terms Explained and Explored. United Kingdom: University of Chicago Press.
2. The Royal Horticultural Society Gardening Manual. (2000). United Kingdom: Dorling Kindersley.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Mushroom Culture and Technology I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution Of The Course			Eligibility Criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Mushroom Culture and Technology I	**2**	**0**	0	**2**	Class XII	NA

Learning objectives

To make students aware about

- mushroom growing techniques.
- medicinal and nutritional value of mushrooms.

Learning Outcomes

After successful completion of the course, students will be able to:

- practice the techniques for cultivation of various edible mushrooms
- setup entrepreneurial small-scale units for self-employment
- apply the skills as Mushroom Grower in large scale industries.

SYLLABUS

Practical:** **60 hours**

** Specimens and examples studied may vary depending on seasonal factors and availability

1. To study the principle and operation of Autoclave, Incubator, Laminar Air Flow/ BSL 2 facility. 4 hours
2. To study edible mushrooms (*Agaricus, Pleurotus, Boletus, Lentinula, Calocybe, Volvariella, Morchella*). 4 hours
3. To study poisonous mushrooms *(Amanita, Cortinarius, Psilocybe, Coprinopsis*). 4 hours
4. To study medicinal mushrooms (*Ganoderma, Ophiocordyceps, Chaga, Hericium*). 4 hours
5. Preparation of various types of compost and media which can be used for cultivation of mushroom. 4 hours
6. To study the common fungal, bacterial, viral, and insect borne diseases of mushrooms (any 2 from each). 4 hours

7. To study the cultivation technique of *Agaricus* mushroom. 4 hours
8. To study the cultivation technique of *Pleurotus* mushroom. 4 hours
9. To study the cultivation technique of *Calocybe/ Volvariella* mushroom. 4 hours
10. To study the cultivation technique of *Ganoderma* mushroom. 4 hours
11. To study the nutritional value and market value of mushrooms, and post-harvest technologies like packaging and preservation. 4 hours
12. Various requirements for setting up a mushroom cultivation unit ("kuccha" or cemented house). 4 hours
13. Entrepreneurship in cultivation of mushrooms. 4 hours
14. Government policies related to the promotion of mushroom cultivation. 4 hours
15. Visit to an Institute or Center conducting mushroom cultivation (Report to be submitted). 4 hours

Essential Readings:

1. Bahl, N. (2015). Hand Book on Mushroom. Page no. 1-166. Oxford &IBH Publishing Company.
2. Russell, S. (2014). The Essential Guide To Cultivating Mushroom. Storey Publishing. North Adams, M.A. 01247.
3. Zied, D. C., Gimenez, A. P. (017) Edible and Medicinal Mushroom page no. 1-585.John Wiley & Sons Ltd.UK.
4. Chang, S.T., Miles, P.G. (2004) Mushrooms Cultivation, Nutritional Value, Medicinal effect and Environmental Impact, CRC Press.
5. Fletcher, J.T., Gaze, R.H. (2007). Mushroom Pest and Disease Control. CRC Press.
6. Ahlawat, O.P., Tewari , R.P. (2007) .Cultivation Technology Of Paddy Straw Mushroom (*Volvariella volvacea*). Pages 1-44 National Research Center for Mushroom (Indian Council of Agricultural Research) Chambaghat, Solan (HP).
7. Rai, R.D., Arumuganathan, Y. (2008). Post Harvest Technology of Mushrooms. National Research Center for Mushroom (Indian Council of Agricultural Research) Chambaghat, Solan (HP)
8. Singh, M., Vijay, B., Kamal, S., Wakchaure, G.C. (2011) . Mushrooms Cultivation, Marketing and Consumption., Publishers Directorate of Mushroom Research (ICAR) Chambaghat, Solan.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Mushroom Culture and Technology-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution Of The Course			Eligibility Criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Mushroom Culture and Technology-II	**2**	**0**	0	**2**	Class XII	NA

Cultivation of Button mushroom and King oyster mushroom

Prerequisites:

Compost preparation for button mushroom would start around October-November and further cultivation steps will take place from January. Compost and spawn should be prepared before going to the next step.

Learning objectives:

- To develop skills for growing button and king oyster mushroom

Learning Outcomes:

After completion of this course, the learner will be able to:

- prepare casing soil and apply over spawn-run compost bags.
- implement harvesting, packaging and marketing of produce as per FSSAI standards.

Syllabus

Practical: 60 hours**

** Specimens and examples studied may vary depending on seasonal factors and availability

1. To add and mix spawn of button mushroom to pre-prepared compost (Spawning). 4 hours
2. To set up ideal mushroom house for cultivation of button mushroom. 8 hours
3. To maintain ideal environmental conditions for spawn run. 4 hours
4. Preparation and sterilization of casing soil. 4 hours
5. To apply casing soil over the spawn run compost bags and incubating for case run.

4 hours

6. To maintain appropriate conditions for pin head formation and fruiting of button mushroom. 8 hours
7. Harvesting of first flush of button mushrooms. 4 hours
8. Post-harvest packaging and storage of button mushrooms. 4 hours
9. Maintaining the environmental conditions for the second flush of button mushroom. 4 hours
10. To prepare and sterilize substrate bags for cultivation of king oyster mushroom. 4 hours
11. To add the spawn of king oyster mushroom in the substrate bags under aseptic conditions and incubator under appropriate conditions. 4 hours
12. To induce fruiting of king oyster mushroom by scraping the mycelium from the edges and surface of spawn run bags. 4 hours
13. Harvesting, post-harvest packaging and storage of king oyster mushrooms. 4 hours

Essential Readings:

1. Aggarwal, A., Sharma, Y.P., Angra, E. (2021). A textbook on mushroom cultivation, Theory and Practices. Newrays Publishing House, 2021.
2. Tiwari, S.C. Kapoor, P. (2018). Mushroom Cultivation. Mittal Publications. ISBN - 978-8183249232.
3. Bahl, N. (2015). Hand Book on Mushroom. Page no. 1-166. Oxford &IBH Publishing Company. ISBN- 13:978-8120413993.
4. Russell, S. (2014). The Essential Guide To Cultivating Mushroom. Storey Publishing. North Adams, MA 01247 page no. 1-233. ISBN 978-1-61212-146-8.
5. Chang, S.T. Miles, P.G. (2004). Mushrooms Cultivation, Nutritional Value, Medicinal effect and Environmental Impact. Page no. 1-477, CRC Press.
6. Fletcher, J.T., Gaze, R.G. (2007). Mushroom Pest and Disease Control. CRC Press.
7. Rai, R.D., Arumuganathan, Y. (2008). Post harvest technology of mushrooms. Pages 1-72. National Research Center for Mushroom (Indian Council of Agricultural Research) Chambaghat, Solan-173 213 (HP)

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Plant Aromatics and Perfumery

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution Of The Course			Eligibility Criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Plant Aromatics and Perfumery	**2**	**0**	0	**2**	Class XII	NA

Learning objectives

- Provide the basic understanding of aromatic and medicinal plants including classification and methods of extracting essential oils.
- Practical demonstration of extraction and quality assessment of the product obtained.

Learning Outcomes

After completion of the course, learners will be able to:

- extract essential oils from a variety of plants and plant parts.
- develop strategy for promotion and marketing of the aromatic and essential oils.
- establish their own startup, become self-reliant and/or adapt to job roles in beauty and wellness sector.

SYLLABUS

Practical: 60 hours

1. Classification of essential oils on the basis of chemical composition, aroma and extraction methods. 4 hours
2. Principles, processing and techniques of extraction of essential oils. 4 hours
3. Cultivation practices of the common aromatic crops (any five) - Rose, Lavender, Peppermint, Spearmint, Basil, Citronella, Vetiver, Palmrosa, Lemongrass. 8 hours
4. Extraction process of essential oil from fruit/ fruit peel by steam distillation (e.g. orange, lemon). 4 hours

5. Extraction of essential oil from bark by steam distillation (e.g. cinnamon). 4 hours
6. Extraction of essential oils from flower by steam distillation (e.g. clove, rose, jasmine, lavender, rosemary). 4 hours
7. Extraction of essential oil from leaves and stems by steam distillation (e.g. lemongrass, eucalyptus, citronella, bottlebrush). 4 hours
8. Extraction of essential oil from seeds by steam distillation (e.g. fennel, nutmeg). 4 hours
9. Extraction of essential oil from root (e.g. vetiver) and rhizome (e.g. ginger, curcuma) by steam distillation 4 hours
10. Determination of oil content in aromatic crop/material by Clevenger's method. 4 hours
11. Quality assessment of essential oils through s*ensory evaluation* (odour, colour), physical tests (specific gravity, refractive index, optical rotation, solubility), chemical tests (determination of acid value, ester value). 8 hours
12. Demonstration/Illustration of Instruments and techniques quality assessment of Gas chromatography (GC) and Thin layer chromatography (TLC). 4 hours
13. Field Visit to essential oils and perfumery Institute/Industry. 4 hours

Essential Readings:

1. EIRI BOARD. (2008). Handbook of Essential Oils Manufacturing and Aromatic Plants5/E edition, Engineers India Research Institute (India), New Delhi.
2. Kochhar, S.L. (2016). Economic Botany – A Comprehensive Study, 5th Edition. New Delhi, India: Cambridge University Press.

Suggestive Readings:

1. Başer, K.H.C., Buchbauer, G. (2020). Handbook of Essential Oils: Science, Technology, and Applications, 3rd edition, CRC Press.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Viewing and Capturing Diversity in Nature

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution Of The Course			Eligibility Criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Viewing and Capturing Diversity in Nature	**2**	**0**	0	**2**	Class XII	NA

Learning objectives

- Understand fundamentals of digital cameras and smartphone photography technology.
- Develop a working knowledge of digital image analysis and processing.
- Understand the importance and use of Nature photography in business and as career goal.
- Enhance appreciation for the tremendous aesthetics inherent in nature.

Learning Outcomes

On successful completion of this course, a student will be able to:

- Describe and use the digital camera and smartphone camera functions and their applications
- employ different photographic equipment to enhance their photographic skills and create digital resources.
- discriminate between the photographic variables with reference to weather and season.
- employ the photographic skills in various professions and for entrepreneurship.

SYLLABUS

Practical: **60 hours**

1. To study the parts of a digital camera. 4 hours
2. To study the principle and working of digital camera/ smartphone camera. 4 hours
3. Working and handling of light microscopes (Dissection and Compound). 4 hours
4. Study of plant forms through microscopic lens (Single-celled, colonial forms, filamentous forms, multicellular and complex forms). 8 hours
5. To study techniques of capturing shots (using light and lenses effectively, macro and micro photography, wide angle and close-ups). 4 hours
6. Study of plant adaptations through photographs (Aquatic and desert plants). 4 hours

7. To capture and understand the Ecological Interactions. 8 hours
8. Identification of different plant life forms through online available tools/ search engines. 8 hours
9. Outdoor/ Campus Photography: Plants, Environment, Landscapes and Cityscape. 4 hours
10. Foldscope: The domestic microscope. Use the Foldscope to explore microscopic organisms in pond water. 4 hours
11. Project Work: To make a portfolio of diverse landscaping patterns/ selected themes through outdoor visits. 8 hours

Essential Readings:

1. Ang., T. (2008). Fundamentals of modern Photography. London, Mitchell.
2. Freeman Patterson "The Art of Seeing" by Key Porter Books.
3. Tim Fitzharris "Landscape Photography" Firefly Books.
4. Kelby, S. (2012). The digital photography book. Peachpit Press.
5. Langford, M., Fox, A., and Smith, R.S. (2013). Langford basic photography:the guide for serious photographers. Amsterdam: Focal Press/Elsevier.
6. Peterson, B. (2016). Understanding exposure: how to shoot great photographs with any camera. AmPhoto Books.

Suggestive readings:

1. Sharma P.D. (2008) Ecology and Environment. Rastogi Publishers.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Apiculture

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Apiculture	2	0	0	2	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To help the student to become familiar with the significance of beekeeping as an economically viable industry.
- To help the student to understand the different species of honeybees, their biology, behaviour and role in pollination.
- To train the students to learn the techniques of honey bee rearing, optimization of techniques based on climate and geographical regions, and various measures to be taken to maximize the benefits.
- To understand the significance of beekeeping in the diversification of agriculture for the rural communities to increase their income and create employment opportunities and at the same time to develop entrepreneurial skills required for self-employment in the beekeeping sector.

Learning Outcomes

After studying this course, the students will be able to:

- Comprehend the various species of honey bees in India, their social organization and its importance.
- Appreciate the opportunities and employment in apiculture – in public, private and government sector.
- Gain thorough knowledge about the techniques involved in bee keeping and honey production.
- Make various products and by-products obtained from beekeeping sector and their importance.
- Develop entrepreneurial skills necessary for self-employment in beekeeping sector.
- Enhance collaborative learning and communication skills through practical sessions, teamwork, group discussions, assignments and projects.

Skill development and job opportunities

- After completion of this course students would obtain the training in collection, identification, and various ways/aspects of bee rearing.
- The students can also take a job as an apiary worker, often called a beekeeper, manage colonies of honeybees for the production of honey as well as pollination services.
- The course would also provide a basic training to enable the students to construct hives and replace combs.
- Enhance entrepreneurial skills by collecting and packaging hive products including honey, beeswax and pollen.
- Make decisions on yards, treatment, splits, honey harvesting and all other beekeeping decisions.
- Identify and report hive health concerns.

SYLLABUS (Practical)

Unit 1: Biology of Bees **16 hours**

Historical background of apiculture, classification and biology of honey bees, Social organization of bee colony, behavioral patterns (bee dance, swarming).

Practical Exercises:

1. Study of the life history of honey bees: *Apiscerana indica*, *Apis mellifera*, *Apis dorsata*, *Apis florea*, *Melipona* sp. from specimen/ photographs - Egg, larva, pupa, adult (queen, drone, worker).
2. Study of morphological structures of honey bees through permanent slides/photographs–mouthparts, antenna, wings, sting apparatus and temporary mount of legs (antenna cleaner, mid leg, pollen basket).
3. Study of natural beehive and identification of queen cells, drone cells and brood.

Unit 2: Rearing of Bees **18 hours**

Artificial Bee rearing (Apiary), Beehives – Newton and Langstroth; Bee Pasturage; Selection of bee species for apiculture –*Apiscerana indica*, *Apis mellifera*; Bee keeping equipment methods of extraction of honey (Indigenous and Modern) & processing; Apiary management - Honey flow period and lean period, effects of pollutants on honeybees**.**

Practical Exercises:

1. Distinguishing characters of workers of three bee species.
2. Importance of site selection for bee keeping.
3. Study of an artificial hive (Langstroth/Newton), its various parts and beekeeping equipment: draw diagrams of bee boxes proportionate to the body size and measure the body length and wing size.
4. Preparation of mount of pollen grains from flowers.

Unit 3: Diseases and Enemies **10 hours**

Bee diseases control and preventive measures: enemies of bees and their control.

Practical Exercises:

1. Diagnosis of honeybee diseases: Protozoan diseases, Bacterial diseases, Viral diseases (one each)-symptoms, nature of damage and control.
2. Identification of honeybee enemies: Predators-Insects and non-insects.

Unit 4: Bee Economy **8 hours**

Products of apiculture industry (Honey, Bees Wax, Propolis, Royal jelly, Pollen etc.) and their uses; Modern methods in employing artificial Beehives for cross pollination in horticultural gardens- stationary and migratory bee keeping.

Practical Exercises:

1. Video demonstration of wax extraction and preparation of comb foundation sheets.
2. Analysis of honey – purity, physical and biochemical parameters (any two constituents).
3. Study of bee pasturage – visit to fields/gardens/orchards for studying the bee activity (role in pollination, nectar collection, videography of honeybee activity) and preparation of herbarium of nectar and pollen yielding flowering plants (floral mapping).

Unit 5: Entrepreneurship in Apiculture **8 hours**

Bee keeping industries – Recent advancements, employment opportunities, economics in small and large-scale beekeeping, scope for women entrepreneurs in beekeeping sector, study of development programs and organizations involved in beekeeping in India.

Exercise:

1. Visit to an apiary/honey processing unit/institute and submission of a report.

Essential/Recommended readings

Singh, S. (1962). Beekeeping in India, Indian Council of Agricultural Research, New Delhi.
Mishra, R.C. (1995). Honeybees and their management in India. Indian Council of Agricultural Research, New Delhi.
Prost, P. J. (1962). Apiculture. Oxford and IBH, New Delhi.
Rahman, A. (2017). Beekeeping in India. Indian Council of Agricultural Research, New Delhi.
Gupta, J.K. (2016). Apiculture, Indian Council of Agricultural Research, New Delhi.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Formulation of Fish Feed

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Formulation of Fish Feed	2	0	0	2	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To give first-hand training on identification of various indigenous ingredients for formulation of fish feed.
- To gather knowledge on the nutritional requirements of the cultivable species.
- To gain knowledge on the impact of formulated feeds on fish growth.
- To enhance the quality of aquacrops and increase the production.

Learning Outcomes

By the end of the course, the students will be able to:

- Identify the useful ingredients for fish feed formulation.
- Learn to prepare fish feed using locally available ingredients.
- Start the Fish feed production industry.
- Initiate entrepreneurship on Fish feed production.

Skill development and job opportunities

After completion of this course students may be

- Employed in various aquaculture related business including prawn and fish farms.
- Fully equipped to start own fish feed production industry.

SYLLABUS:

Practical

Unit I: Selection of ingredients **20 Hours**

Identification of various types of non-conventional ingredients for fish feed formulation. Evaluation of their nutritional quality. Preparation of fish feed and feeding of the prepared feeds to the cultivable fishes and prawns. The study of impact of the prepared feeds on the performances of fishes and prawns.

Exercises:

1. Identification of various types of locally available ingredients (*viz*. macrophytes, oil-cakes, plants etc.) for fish feed formulation.

2. Evaluation of the nutritional values (*viz*. protein, lipid, carbohydrates, ash, amino acids, fatty acids) of these ingredients.

3. Assay of presence of anti-nutritional factors (*viz*. tannin, saponin, phytic acid, oxalic acid etc.) in these ingredient

Unit II: Formulation of Fish Feed **20 Hours**

Preparation of fish feed using traditional method and computerized soft ware. Evaluation of quality of prepared feed for the cultivable species.

Exercises:

1. Formulation of fish feed using "Pearson Square" method.
2. Formulation of fish feed using computerized soft ware.
3. The assay of biochemical composition of formulated feed: protein, lipid, carbohydrate, ash, amino acids, fatty acids.

Unit III: Feeding of Fish **20 Hours**

The feeding of the prepared feeds to the cultivable fishes and prawns. The study of impact of the prepared feeds on the performances of fishes and prawns. Evaluation of nutritional value of fishes for human consumption.

Exercises:

1. The feeding of the prepared feeds to the cultivable fishes and prawns.
2. Evaluation of impact of the prepared feeds on the survival, growth and production of fishes and prawns.
3. Assessment of Feed Conversion Ratio (FCR) and Feed Conversion Efficiency (FCE) of the feed.
4. Assay of nutritional value of the produced fishes/ prawns for human consumption.
5. Evaluation of impact of prepared feed on the water quality of the culture system.
6. Visit to a Fish feed preparation facility/ industry.

Recommended Readings:

- AOAC, Association of Official Analytical Chemists. 2017. Official Methods of Analysis. Washington, DC: Association of Official Analytical Chemists Inc.
- APHA, American Public Health Association. 2017. Standard Methods for the Examination of Water and Wastewater. 23rd ed. Washington DC, USA: American Public Health Association, American Water Works Association, Water Environment Federation.
- Chakrabarti, R. and Sharma, J. G. 2008. Aquahouse. New Dimension of Sustainable Aquaculture. DIPAS, Indian Council of Agricultural Research, New Delhi, India.
- Holt, G. J. 2021. Larval Fish Nutrition. Willey-Blackwell, UK.

• ICAR, Indian Council of Agricultural Research. 2013. Handbook of Fisheries and Aquaculture. Directorate of Knowledge Management in Agriculture, Indian Council of Agricultural Research, New Delhi, India.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Fish Breeding and Larviculture

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Fish Breeding and Larviculture	2	0	0	2	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To give first-hand training on various aspects of brood stock maintenance of carps and air breathing fishes.
- To understand the breeding techniques for carps and air breathing fishes.
- To understand the larviculture techniques for carps.
- To gain experience on the larviculture techniques of air breathing fishes.
- To gather knowledge in the management of optimum water quality for larviculture.
- To gather knowledge on the nutritional requirements of the cultivable species.
- To gain knowledge on the impact of live food in larviculture.

Learning Outcomes

By the end of the course, the students will be able to:

- Produce seeds of carps and air breathing fishes.
- Start the Fish hatchery business.
- Start fish-food production.
- Initiate entrepreneurship in fish seeds production.

Skill development and job opportunities

After completion of this course students may be

- Employed in various aquaculture related business including prawn and fish farms.
- Fully equipped to start own entrepreneurships in fish farming.

SYLLABUS:

Practical

Unit I: Breeding of Economically Important Fishes **20 Hours**

Breeding of various fishes in the captivity and production of quality fish seeds for aquaculture.

Exercises:

1. Management of brood stock units and breeding of carps.
2. Maintenance of brood stock units and breeding of air breathing fishes.

3. Estimation of major water quality parameters *viz*., temperature, pH, dissolved oxygen, conductivity etc. in the fish breeding units.

Unit II: Culture of Important Live Food Organisms **15 Hours**

Culture of various live food organisms using organic manures and feeding of different fish larvae produced.

Exercises:

1. Culture of live food organisms *viz*., rotifers, cladocerans, copepods, chironomid larva etc. using organic manures (like cattle manure, poultry wastes and mustard oil-cake).

2. Evaluation of major water quality parameters *viz*., temperature, pH, dissolved oxygen, ammonia etc. in the live food culture units.

3. The enrichment of live food organisms (with vitamin C, DHA, EPA etc.) to enhance the nutritional value of the live food for fish larvae.

Unit II: Larviculture **25 Hours**

Culture of larvae of carps and air breathing fishes and production of healthy seeds for stocking ponds.

Exercises:

1. Culture of fish larvae in the static water/ Recirculating Aquaculture Systems (RAS).

2. Measurement of water quality parameters (*viz*., temperature, pH, dissolved oxygen, ammonia etc.) in the larvae culture unit regularly.

3. Feeding of fish larvae with live food thrice daily.

4. The study of morphological and physiological changes in the larvae during ontogenic development.

5. Visit to a fish farm.

Recommended Readings:

- AOAC, Association of Official Analytical Chemists. 2017. Official Methods of Analysis. Washington, DC: Association of Official Analytical Chemists Inc.

- APHA, American Public Health Association. 2017. Standard Methods for the Examination of Water and Wastewater. 23rd ed. Washington DC, USA: American Public Health Association, American Water Works Association, Water Environment Federation.

- Chakrabarti, R. and Sharma, J. G. 2008. Aquahouse. New Dimension of Sustainable Aquaculture. DIPAS, Indian Council of Agricultural Research, New Delhi, India.

- Holt, G. J. 2021. Larval Fish Nutrition. Willey-Blackwell, UK.

- ICAR, Indian Council of Agricultural Research. 2013. Handbook of Fisheries and Aquaculture. Directorate of Knowledge Management in Agriculture, Indian Council of Agricultural Research, New

Delhi, India.

- Pillay, T. V. R. 2005. Aquaculture. Principles and Practices. Blackwell Publishing, New Delhi, India.

Examination scheme and mode:
Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Ornamental Fish Culture: Opportunity and Scope

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Ornamental Fish Culture: Opportunity and Scope	2	0	0	2	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To give first-hand training on Aquarium preparation and decoration.
- To gain hands-on training on breeding and culture of various Ornamental fishes.
- To gain experience in the management of optimum water quality in the fish aquarium.
- To gather knowledge on the nutritional requirements of the cultivable species.

Learning Outcomes

By the end of the course, the students will be able to:

- Prepare and decorate ornamental fish aquarium.
- Identify the suitable and economically important Ornamental fish species.
- Initiate entrepreneurship on Aquarium making and Ornamental fish production.

Skill development and job opportunities

After completion of this course students will be

- Fully equipped to start own entrepreneurship in **aquarium making and its decoration.**
- Aware about the requirements to start their own **Ornamental fish industry**.

SYLLABUS:

Practical

Unit I: Preparation of Aquarium and Its Decoration **20 Hours**

Preparation of glass aquaria of various shapes and their decoration using locally available materials. The impact of aquatic plants in the maintenance of healthy environment in the aquarium.

Exercises:

1. Construction of glass aquaria of various shapes (rectangular, square, round etc.).
2. Identification and culture of useful aquatic plants for the decoration of fish aquarium.

3. Decoration of aquarium with plants and locally available materials.

Unit II: Breeding of Ornamental Fishes and Culture of Plants 20 Hours

Identification of economically important cultivable Ornamental plants and fishes for culture.

Exercises:

1. Identification of economically important Ornamental fishes and their breeding.
2. Culture of young larvae and feeding them live food.
3. Regular monitoring of water quality parameters viz. temperature, pH, conductivity, dissolved oxygen, ammonia etc. in the fish aquarium.
4. Culture of zooplankton (rotifers, cladocerans, copepods etc.) using organic manures for the feeding of fish larvae.
5. Production of plants for the decoration of aquarium.

Unit III: Production of Marketable Ornamental Fishes 20 Hours

Culture of compatible fishes together and feeding them with live food and prepared diets. Keep them ready for local market.

Exercises:

1. Maintenance of aquarium.
2. Feeding of ornamental fishes with various natural foods and prepared diets.
3. Evaluation of their growth rate and colour development.
4. Development of marketing strategy for the produced ornamental fishes in well decorated aquaria.
5. Visit to any Aquarium Facility.

Recommended Readings:

- AOAC, Association of Official Analytical Chemists. 2019. Official Methods of Analysis. Washington, DC: Association of Official Analytical Chemists Inc.
- APHA, American Public Health Association. 2017. Standard Methods for the Examination of Water and Wastewater. 23rd ed. Washington DC, USA: American Public Health Association, American Water Works Association, Water Environment Federation.
- Chakrabarti, R. and Sharma, J. G. 2008. Aquahouse. New Dimension of Sustainable Aquaculture. DIPAS, Indian Council of Agricultural Research, New Delhi, India.
- Holt, G. J. 2021. Larval Fish Nutrition. Willey-Blackwell, UK.
- ICAR, Indian Council of Agricultural Research. 2013. Handbook of Fisheries and Aquaculture. Directorate of Knowledge Management in Agriculture, Indian Council of Agricultural Research, New Delhi, India.

- Pillay, T. V. R. 2005. Aquaculture. Principles and Practices. Blackwell Publishing, New Delhi, India.

- Swain, S. K., Sarangi, N. and Ayyapan, S. 2010. Ornamental Fish Farming. DIPAS, Indian Council of Agricultural Research, New Delhi, India.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Bio-floc Technology

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Bio-floc Technology	**2**	**0**	**0**	**2**	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn about the basics of Bio-floc technology and it's important as a skill for self-sustainable and self-employment
- To learn production of fish in the larger scale with minimum use of water source and land to help in the total production of fish for human consumption in India.
- To learn about how to set-up the technology looking into the different conditions and availability of space and training.
- To teach fundamental concept of running this system with the biological knowledge of bacteria culture, water quality management
- To learn the types of fish species, types of feed and feeding, density of fish to be maintain in the particular volume of water etc.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to gain insight into fish culture using minimum amount of water, land, fish feed and with high biosecurity.
- After studying this course, students will be able to learn and explain about the bio-floc technology and they can set up bio-floc tanks for themselves and for others in the form of industries and entrepreneurship as well as for stat-up with the help of existing Government funding and self funding.
- After studying this course, students will be able to understand and implement bio-floc system and this can be an alternative skill for earning, self-employment, job generation and contribute in large scale fish production which are hygienic, organic and good protein source for human health.

SYLLABUS:

Practical

Unit-I **12 Hours**

Introduction to basics of Bio-floc technology and its applications in aquaculture industry, Standard operating procedure, Microbial Role in Bio-floc System, Design Set-up and installation of Bio-floc system, Biosecurity , Advance over pond aquaculture, basic equipment's and necessary items .

Exercises

1. Inoculation of bacteria and its role in Bio-floc technology.
2. Plankton and microbial analysis of bio-floc.
3. Set-up and Installation of Bio-floc system.

Unit-II **12 Hours**

Optimum water quality parameters and its management. Floc water preparation and floc volume measurement. Monitoring and management of dissolved oxygen, pH, conductivity, temperature, salinity, ammonia, nitrate, nitrite, TDS. Measurement of floc volume and its control. Role of bacteria in management of water quality.

Exercises

1. Analysis of following water quality parameters in Bio-floc culture tanks using kits: temperature, pH, conductivity , salinity, TDS, ammonia, nitrate, nitrite.
2. Water preparation for Bio-floc system.
3. Measurement of floc volume using imhoff cone.

Unit-III **12 Hours**

Suitable species selection, Pre-stocking and post stocking management, Food and feeding management, Production performance, Nursery rearing days, Survival (%), Average body weight at harvest, feed conversion ratio.

Exercise

1. Identification of suitable fish, feeding habits, stocking capacity, growth rate and duration of culture.
2. The study of Feed Conversion Ratio (FCR) and Feed Conversion Efficiency (FCE).

Unit-IV **12 Hours**

C: N ratio management , Nutritional requirements and protein levels in the food.

Source of carbon, calculation of carbon and nitrogen ratio, suitable C:N ration management in the initial floc preparation and during culture days. Selection of species-specific food with optimum protein level, food size, quantity of feed according to per cent body weight, feeding rate.

Exercise

1. Calculation of C: N ratio and its management from the TAN content in the floc water.
2. Mouth size and food size and growth study.

Unit-V **12 Hours**

Disease management and prophylactic treatment, Economics values of fish and its marketing strategies. Common disease in bio-floc, identification of disease its causes, species-specific disease, stress management and treatment. Steps for prevention and protections of possible disease, possible control measures with setup systems by controlling light, temperature etc. Sludge management. Economics values of fish and its marketing strategies. Production capacity and requirements, start-up and entrepreneurship opportunities, funding and grants for setting up from Government.

Exercise

1. Fungal, bacterial, parasitic and viral disease commonly found in bio-floc fish culture system.
2. Identification and economically important fish species for culture in bio-floc system like prawn, other new economic species etc.
3. Write a Project for start-up or entrepreneurship and governmental grants.
4. Visit to hatcheries with super-intensive models.

Recommended Readings:

- Avnimelech, Y. 2015. Bio-floc Technology- a Practical Guidebook. 3rd ed. World Aquaculture Society, USA.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Aquaculture Entrepreneurship

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Aquaculture Entrepreneurship	2	0	0	2	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To give first-hand training on traditional and technology-based Aquaculture.
- To understand the importance of different types of ponds required for aquaculture.
- To understand the requirement of advanced technology for sustainable development of aquaculture in India.
- To gain experience in the management of optimum water quality in the fish production systems.
- To enhance the quality of aquacrops and increase the production.

Learning Outcomes

By the end of the course, the students will be able to:

- Identify the useful aquaculture systems for sustainable aquaculture development.
- Recognize the suitable and economically important aquacultural species.
- Understand the importance of aquaculture in nutrition security, poverty elevation and employment generation.

Skill development and job opportunities

After completion of this course students may be

- Employed in various aquaculture related business including prawn and fish farms.
- Fully equipped to start own entrepreneurships in fish farming.

SYLLABUS:

Practical

Unit I: Pond-based Traditional Aquaculture **20 Hours**

Introduction to indigenous pond-based fish culture systems and identification of economically important cultivable finfishes and shellfishes. The impact of aquatic organisms in the production of aquacrops.

Exercises:

1. Designing (layout) and drawing of a self-sustainable Aquaculture farm showing different ponds.
2. Selection and identification of cultivable finfishes and shellfishes (prawns, mussels, crabs).
3. Collection and identification of various freshwater aquatic plants. Understanding of the role of different aquatic plants in aquaculture.

4. Identification of harmful aquatic insects and their remedial measures.

5. The study of diurnal fluctuations of major water quality parameters (*viz*., temperature, pH, dissolved oxygen, ammonia etc.) in a pond.

Unit II: Recirculating Aquaculture System (RAS) 20 Hours

Application of advance technology like, Recirculating Aquaculture System (RAS) for the sustainable development of Aquaculture in India.

Exercises:

1. Designing of a land-based Recirculating Aquaculture System (RAS).

2. Evaluation of various types of filters like, mechanical, chemical and biological filters in the maintenance of water quality in the RAS.

3. The study of role of flow rate and duration of circulation in the maintenance of water quality in the RAS.

4. The monitoring of temperature, pH, dissolved oxygen, ammonia, nitrite, nitrate, phosphate etc. at different hours of water circulation.

5. Culture of various fishes and prawns in the RAS.

6. Visit to a Recirculating Aquaculture System.

Unit III: Aquaponics System 20 Hours

Application of Aquaponics System to grow multiple crops simultaneously and thereby, increases the production of aquacrops in per unit area in a sustainable manner. Thus, enhances the earning of Fish farmers.

Exercises:

1. Designing of an Aquaponics System.

2. Evaluation of role of various types of edible (lettuce, tomato, water spinach etc.) and ornamental plants in the maintenance of ammonia levels in the fish culture units.

4. Identification of microorganisms functioning in the Aquaponics System.

5. Culture of various fishes and prawns in the Aquaponics System.

6. The monitoring of temperature, pH, dissolved oxygen, ammonia, nitrite, nitrate, phosphate etc. in the fish culture units.

7. Visit to an Aquaponics System.

Recommended Readings:

- AOAC, Association of Official Analytical Chemists. 2019. Official Methods of Analysis. Washington, DC: Association of Official Analytical Chemists Inc.

- APHA, American Public Health Association. 2017. Standard Methods for the Examination of Water and Wastewater. 23rd ed. Washington DC, USA: American Public Health Association, American Water Works Association, Water Environment Federation.

- Chakrabarti, R. and Sharma, J. G. 2008. Aquahouse. New Dimension of Sustainable Aquaculture. DIPAS, Indian Council of Agricultural Research, New Delhi, India.

- Holt, G. J. 2021. Larval Fish Nutrition. Willey-Blackwell, UK.

- ICAR, Indian Council of Agricultural Research. 2013. Handbook of Fisheries and Aquaculture. Directorate of Knowledge Management in Agriculture, Indian Council of Agricultural Research, New Delhi, India.

- Pillay, T. V. R. 2005. Aquaculture. Principles and Practices. Blackwell Publishing, New Delhi, India.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Pearl Culture

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Pearl Culture	**2**	**0**	**0**	**2**	XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn the basics of Pearl culture and it's important as a skill for self-sustainable and self-employment.
- To impart a comprehensive knowledge regarding morphology, anatomy, physiology, food and feeding behaviour, related diseases and its control measures of the mother Pearl Oyster.
- To gather a comprehensive knowledge of various types of implantations in Oyster and also the technique of insertion of beads for the formation of Pearl.
- To gather experience of post-operative care.
- To learn the techniques of harvesting, processing, sorting and marketing of the Pearl produced.

The Learning Outcomes:

By the end of the course, the students will be able to:

- Gain overall idea about Pearl oyster - its biology, morphology especially the histology of mantle, pearl formation etc.
- Recognize the suitable species of oyster for pearl culture in India.
- Set up a pearl culture system in pond/ tanks.
- Start entrepreneurship on Pearl culture.
- Start-up with the help of existing Government funding.

Skill development and job opportunities

After completion of this course students may be

- Employed in various pearl farming related businesses.
- Fully equipped to start own entrepreneurship in **pearl farming**.
- Completely aware about the requirements to start their own **Pear processing industry**.

SYLLABUS:

Practical

Unit-I **20 Hours**

Introduction to pearl culture. Morphology and anatomy of pearl culture. Structure and histology of mantle. Origin of pearls, mussels producing pearls. Identification of species capable of producing pearl.

Exercises:

1. Set-up and Installation of culture system (sac culture, raft culture) for sustainable production.
2. Identification of suitable species capable to produce pearl.
3. The study of morphology and growth rate of the pearl oyster.
4. Measurement of major water quality parameters.
5. Feeding of the pearly oyster.

Unit-II **20 Hours**

Implantation of foreign particles for pearl formation and post operation care.

Exercise:

1. Preparation of the graft tissue for insertion.
2. Pearl oyster surgery and insertion technique of bead.
3. Post-operational care.
4. Culture of the pearl oyster using natural food .
5. Regular monitoring of the water quality parameters.

Unit-III **20 Hours**

Harvesting of Pearl and its processing. Sorting of Pearl. Marketing and economics concerned.

Exercises:

1. Bleaching and collection of pearls.
2. Cleaning of pearls.
3. Sorting of pearls.
4. Marketing of pearl.
5. Visit to a pear production site.

Recommended Readings:

- Srivastava, C.B.L. 2014. Fishery Science and Indian Fisheries.
- Far, A. E. 1986. Pearls. Butterworth Heinemann publications.
- Beveridge, M.C.M. 1987. Cage aquaculture. Fishing News.
- Bardach, J.E.W . 1972. Aquaculture farming and husbandry of freshwater and Sorting of Pearl. Marketing and economics concerned with Pearl Culture. Generation marine organisms
- Dobilet, D. 199. Pearl Farming. Australia: Nat Geographic Mag publication.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Sericulture I: Mulberry Silkworm Rearing

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Sericulture I: Mulberry Silkworm Rearing	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the students aware about the significance of sericulture as a profit-making enterprise.
2. To help the students to understand the biology of silkworms and its nutritional requirement to secrete quality silk.
3. To give an understanding about the techniques of silkworm rearing, reeling of silk and various measures to be taken to maximize the benefits.
4. To help the students to know about various uses of silk and develop entrepreneurial skills required for self-employment in sericulture and silk production sector.

Learning Outcomes

Upon completion of the course, students should be able to:

1. Learn about the history of sericulture and silk route.
2. Recognize various species of silk moths in India, and exotic and indigenous races.
3. Be aware about the opportunities and employment in sericulture industry- in public, private and government sector.
4. Gain thorough knowledge about the techniques involved in silkworm rearing and silk reeling.
5. Develop entrepreneurial skills necessary for self-employment in mulberry and seed production and be apprised about practicing sericulture as a profit-making enterprise.
6. Enhance collaborative learning and communication skills through practical sessions, team work, group discussions, assignments and projects.

Skill Development and Job Opportunities

1. Sericulture is multi-disciplinary activity consists of mulberry leaf production, silkworm rearing (cocoon production), silkworm egg production, silk reeling (yarn production), twisting, Warp and weft making, printing and dyeing, weaving, finishing, garment designing, marketing etc.
2. The demand for silk is bound to increase in the coming years This course will therefore help in generating employment, economic development and improvement in the quality of life of unemployed youth.
3. This course will generate entrepreneurs in this field. Sericulture offers gainful employment not only the rural masses but also for the educated youth in semi-urban and urban areas.

4. Effective utilization of waste generated in the industry will help in making the sericulture sector more viable, stable and create more employment opportunities.
5. Sericulturists fall under the category of primary activities. They usually find employment in sectors like government and research development centres.

SYLLABUS

Introduction to sericulture. Life cycle of silkworm and its characteristic features, Rearing of mulberry silk worm

(**60 hours)**

Practical

1. Study of models of rearing houses, appliances used in silkworm rearing
2. Preparation and application of disinfectants in rearing house and appliances
3. Technique for hot and cold acid treatment of silkworm eggs, its advantages and disadvantages
4. Rearing Techniques: Harvesting and preservation technique; leaf selecting for different instants; mulberry leaf estimation; Identification of moulting larva, care during moulting, mounting and mounting density, types of mountages; Harvesting of cocoons, assessment of cocoons.
5. Selection of moth, pairing and despairing, preparation of eggs (loose and sheet, surface sterilization of eggs
6. Visit to seed cocoon markets, commercial grainage and cold storage centre to know activities of cocoon markets, preparation of laying and cold storage of eggs.
7. Mulberry Crop Cultivation: Preparation of nursery beds, Different propagation methods – grafting and layering, Planting System and Intercultural Operations: - pit and row system, mulching, irrigation.
8. Visit to Sericulture research institute

Essential Readings

- Manual on Sericulture (1976); Food and Agriculture Organisation, Rome Ullal, S.R. and Narasimhanna M.N. (1987) Handbook of Practical Sericulture; 3rd Edition, CSB, Bangalore

Suggested Readings

- Yonemura, M. and Rama Rao, N. (1951) A Handbook of Sericulture. I. Rearing of silk-worms. Government Branch Press, Mysore.
- Ananthanarayanan, S. K. (2008) Silkworm Rearing. Daya Publishing House Aruga, H. (1994). Principles of Sericulture. CRC Press

- Sathe, T. V. and Jadhav, A. (2002) Sericulture and Pest Management. Daya Publishing House Yup-Lian, L. (1991) Silkworm Diseases. Food and Agricultural Organization.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Sericulture II: Eri Silkworm Rearing

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Sericulture II: Eri Silkworm Rearing	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the students aware about the significance of sericulture as a profit-making enterprise.
2. To help the students to understand the biology of silkworms and its nutritional requirement to secrete quality silk.
3. To give an understanding about the techniques of silkworm rearing, reeling of silk and various measures to be taken to maximize the benefits.
4. To help the students to know about various uses of silk and develop entrepreneurial skills required for self-employment in sericulture and silk production sector.

Learning Outcomes

Upon completion of the course, students should be able to:

1. Learn about the history of sericulture and silk route.
2. Recognize various species of silk moths in India, and exotic and indigenous races.
3. Be aware about the opportunities and employment in sericulture industry- in public, private and government sector.
4. Gain thorough knowledge about the techniques involved in silkworm rearing and silk reeling.
5. Develop entrepreneurial skills necessary for self-employment in mulberry and seed production and be apprised about practicing sericulture as a profit-making enterprise.
6. Enhance collaborative learning and communication skills through practical sessions, team work, group discussions, assignments and projects.

Skill Development and Job Opportunities

Sericulture mainly focuses on silkworms rearing with the main aim of silk production. There are several applications of this:

1. The demand for silk is bound to increase in the coming years This course will therefore help in generating employment, economic development and improvement in the quality of life of unemployed youth. This course will generate entrepreneurs in this field.
2. . Sericulture by-products have remarkable application in the preparation of compost. Sericulture waste upon enrichment can be converted to high value manures.
3. Silk consists of two types of proteins, silk fibroin and sericin.

a. Sericin contributes about 20-30 per cent of total cocoon weight. It is characterized by its high content of serine and 18 amino acids, including essential amino acids. Sericin has wide applications in pharmaceuticals and cosmetics such as, wound healing, bioadhesive moisturizing, antiwrinkle and antiaging properties.
b. Silk fibroin, has a variety of applications in pharmaceutical, food, and fodder industries. Silk fibroin is used for bone formation, silk thread in surgery, and drug delivery system . Silk fibroin has unique properties including good adherence with flexibility to wound bed, absorption of exudates, biocompatibility, biodegradability, minimal inflammatory reaction and in skin grafting due to its outstanding mechanical properties.

4. Mulberry, the sole food plant of silkworm has also the potential to be used in pharmaceutical and food industry.

SYLLABUS

Introduction to non-mulberry sericulture (Eri, Tassar, Muga). Morphology of Eri silkworm, Propagation of host plant. **(60 hours)**

Practical

1. Propagation of castor food plant
2. Study of models of rearing houses, appliances used in Eri silkworm rearing
3. Preparation and application of disinfectants in rearing house and appliances
4. Rearing techniques of Eri silkworm, Eri mother moth examination, mounting method and storage of cocoons.
5. Incubation of eri eggs and its egg hatching ratio

Essential Readings

- Manual on Sericulture (1976); Food and Agriculture Organisation, Rome Ullal, S.R. and Narasimhanna M.N. (1987) Handbook of Practical Sericulture; 3rd Edition, CSB, Bangalore

Suggested Readings

- Yonemura, M. and Rama Rao, N. (1951) A Handbook of Sericulture. I. Rearing of silk-worms. Government Branch Press, Mysore.
- Ananthanarayanan, S. K. (2008) Silkworm Rearing. Daya Publishing House Aruga, H. (1994). Principles of Sericulture. CRC Press
- Sathe, T. V. and Jadhav, A. (2002) Sericulture and Pest Management. Daya Publishing House Yup-Lian, L. (1991) Silkworm Diseases. Food and Agricultural Organization.
- Hisao Aruga, Principles of Sericulture, Oxford & IBH Publications
- Eikichi Hiratsuka, Silkworm Breeding, Oxford & IBH Publications
- P.K. Pandey, S.K. Sharan, Silk Culture, APH Publishing Corp.
- Dr. P.K. Rajan, Silkworm Rearing Technology, Central Silk Board
- R.K. Goel, Laboratory Techniques in Sericulture, APH Publishing Corp.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Sericulture III: Silk Technology

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Sericulture III: Silk Technology	2	0	0	2	Class XII	NA

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the students aware about the significance of sericulture as a profit-making enterprise.
2. To help the students to understand the biology of silkworms and its nutritional requirement to secrete quality silk.
3. To give an understanding about the techniques of silkworm rearing, reeling of silk and various measures to be taken to maximize the benefits.
4. To help the students to know about various uses of silk and develop entrepreneurial skills required for self-employment in sericulture and silk production sector.

Learning Outcomes

Upon completion of the course, students should be able to:

1. Learn about the history of sericulture and silk route.
2. Recognize various species of silk moths in India, and exotic and indigenous races.
3. Be aware about the opportunities and employment in sericulture industry- in public, private and government sector.
4. Gain thorough knowledge about the techniques involved in silkworm rearing and silk reeling.
5. Develop entrepreneurial skills necessary for self-employment in mulberry and seed production and be apprised about practicing sericulture as a profit-making enterprise.
6. Enhance collaborative learning and communication skills through practical sessions, team work, group discussions, assignments and projects.

Skill Development and Job Opportunities

Sericulture mainly focuses on silkworms rearing with the main aim of silk production. There are several applications of this:

1. The demand for silk is bound to increase in the coming years This course will therefore help in generating employment, economic development and improvement in the quality of life of unemployed youth. This course will generate entrepreneurs in this field.
2. . Sericulture by-products have remarkable application in the preparation of compost. Sericulture waste upon enrichment can be converted to high value manures.
3. Silk consists of two types of proteins, silk fibroin and sericin.
    a. Sericin contributes about 20-30 per cent of total cocoon weight. It is characterized by its high content of serine and 18 amino acids, including essential amino acids. Sericin has wide

applications in pharmaceuticals and cosmetics such as, wound healing, bioadhesive moisturizing, antiwrinkle and antiaging properties.

b. Silk fibroin, has a variety of applications in pharmaceutical, food, and fodder industries. Silk fibroin is used for bone formation, silk thread in surgery, and drug delivery system . Silk fibroin has unique properties including good adherence with flexibility to wound bed, absorption of exudates, biocompatibility, biodegradability, minimal inflammatory reaction and in skin grafting due to its outstanding mechanical properties.

4. Mulberry, the sole food plant of silkworm has also the potential to be used in pharmaceutical and food industry.

SYLLABUS

Introduction to Silk Technology (**60 hours)**

Practical

1. Introduction to different textile fibres.
2. Cocoon stifling- different methods and determination of degree of drying.
3. Determination of commercial characters of cocoon: average cocoon weight, shell weight, shell percentage, average filament length, reelibility, raw silk recovery percentage, renditta and denier.
4. Identification of silk, cotton, wool and synthetic fibres by various tests.
5. Raw silk testing and grading by mechanical tests like winding test, seriplane test and cohesion test.
6. Study of silk manufacturing unit.

Essential Readings

- Manual on Sericulture (1976); Food and Agriculture Organisation, Rome Ullal, S.R. and Narasimhanna M.N. (1987) Handbook of Practical Sericulture; 3rd Edition, CSB, Bangalore

Suggested Readings

- Yonemura, M. and Rama Rao, N. (1951) A Handbook of Sericulture. I. Rearing of silk-worms. Government Branch Press, Mysore.
- Ananthanarayanan, S. K. (2008) Silkworm Rearing. Daya Publishing House Aruga, H. (1994). Principles of Sericulture. CRC Press
- Sathe, T. V. and Jadhav, A. (2002) Sericulture and Pest Management. Daya Publishing House Yup-Lian, L. (1991) Silkworm Diseases. Food and Agricultural Organization.
- Hisao Aruga, Principles of Sericulture, Oxford & IBH Publications
- Eikichi Hiratsuka, Silkworm Breeding, Oxford & IBH Publications
- P.K. Pandey, S.K. Sharan, Silk Culture, APH Publishing Corp.
- Dr. P.K. Rajan, Silkworm Rearing Technology, Central Silk Board
- R.K. Goel, Laboratory Techniques in Sericulture, APH Publishing Corp.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Sericulture IV: Application of Sericulture in Therapeutic and Cosmetic Industry

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Sericulture IV: Application of Sericulture in Therapeutic and Cosmetic Industry	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the students aware about the significance of sericulture as a profit-making enterprise.
2. To help the students to understand the biology of silkworms and its nutritional requirement to secrete quality silk.
3. To give an understanding about the techniques of silkworm rearing, reeling of silk and various measures to be taken to maximize the benefits.
4. To help the students to know about various uses of silk and develop entrepreneurial skills required for self-employment in sericulture and silk production sector.

Learning Outcomes

Upon completion of the course, students should be able to:

1. Learn about the history of sericulture and silk route.
2. Recognize various species of silk moths in India, and exotic and indigenous races.
3. Be aware about the opportunities and employment in sericulture industry- in public, private and government sector.
4. Gain thorough knowledge about the techniques involved in silkworm rearing and silk reeling.
5. Develop entrepreneurial skills necessary for self-employment in mulberry and seed production and be apprised about practicing sericulture as a profit-making enterprise.
6. Enhance collaborative learning and communication skills through practical sessions, team work, group discussions, assignments and projects.

Skill Development and Job Opportunities

1. Sericulture is multi-disciplinary activity consists of mulberry leaf production, silkworm rearing (cocoon production), silkworm egg production, silk reeling (yarn production), twisting, Warp and weft making, printing and dyeing, weaving, finishing, garment designing, marketing etc.

2. The demand for silk is bound to increase in the coming years This course will therefore help in generating employment, economic development and improvement in the quality of life of unemployed youth.
3. This course will generate entrepreneurs in this field. Sericulture offers gainful employment not only the rural masses but also for the educated youth in semi-urban and urban areas.
4. Effective utilization of waste generated in the industry will help in making the sericulture sector more viable, stable and create more employment opportunities.
5. Sericulturists fall under the category of primary activities. They usually find employment in sectors like government and research development centres.

SYLLABUS

Sericulture as a tool for rural development. Uses of different by-products of sericulture in pharmaceuticals and Cosmetics **(60 hours)**

Practical

1. Identify and collection of different waste materials of mulberry, silkworm rearing and silk reeling
2. Prepare different useful products of mulberry leaf waste and sticks.
3. Silkworm sericin in- medical textiles, regenerative drugs, and tissue engineering, cosmeceuticals, food additives, and manufacturing of valuable biomaterials.
4. Silkworm pupa in the field of therapeutics, cosmetics, animal feed, fertilizer, etc.
5. Sericulture wastes in sustainable applications for biofuels generation.
6. Entrepreneurial ideas to convert waste material of sericulture into raw material for other industries.
7. IT/ non IT based projects of sericulture.

Essential Readings

- Manual on Sericulture (1976); Food and Agriculture Organisation, Rome Ullal, S.R. and Narasimhanna M.N. (1987) Handbook of Practical Sericulture; 3rd Edition, CSB, Bangalore

Suggested Readings

- Yonemura, M. and Rama Rao, N. (1951) A Handbook of Sericulture. I. Rearing of silk-worms. Government Branch Press, Mysore.
- Ananthanarayanan, S. K. (2008) Silkworm Rearing. Daya Publishing House Aruga, H. (1994). Principles of Sericulture. CRC Press

- Sathe, T. V. and Jadhav, A. (2002) Sericulture and Pest Management. Daya Publishing House Yup-Lian, L. (1991) Silkworm Diseases. Food and Agricultural Organization.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Chemistry Lab Operations and Safety Measures

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Chemistry Lab Operations and Safety Measures	**2**	**0**	**0**	**2**	**Class XII with Science**	**NIL**

Learning Objectives

- To cultivate efficient working skills among the students to work in a chemistry laboratory
- To create a trained workforce which can responsibly learn imbibe and explore verticals on structured knowledge safely.
- To make students aware of different chemicals and their properties being used in the chemistry laboratory.

Learning outcomes

After studying this course, the student will be:

- Able to design and implement safe working practices in chemistry laboratory.
- Able to safely handle different glass apparatus
- Able to handle the chemicals and equipment safely and properly.
- Able to design working protocols related to various methods and instruments in chemistry laboratory.

SYLLABUS

Practicals/ Hands-on Training: **60 hours**

Part A: Safety Measures

1) Design an illustrative chart exhibiting creativity at transaction of Do's and Don'ts instructions for working in a chemistry laboratory.
2) i. Carry out Classification and labeling of the given set of chemicals based upon Globally Harmonized System.
   ii. Carry out detailed survey of the Chemical Abstract Service (CAS) Registry Number and identify the given set of CAS RN and explain the different sections of CAS RN.
3) Carry out preparation of the indicative MSDS (Material Safety Data Sheet) of given set of chemicals as per Standard MSDS format.
4) Design an illustrative chart exhibiting creativity at transaction of Common Safety Symbols along with its description. Associate appropriate safety symbol with each of the given set of chemicals.

5) Draw and elucidate the National Fire Protection Association Hazard Labels.

6) i. Identify and enlist the Incompatible Chemicals from a given set of chemicals available in the laboratory.
   ii. Carry out investigations on Labeling and storage of Chemical in laboratory.

7) i. On the basis of MSDS analysis, identify the required storage conditions for the given set of chemicals.
   ii. Describe procedure for the storage, maintenance and handling of compressed gas cylinders.

   iii. Explore guidelines for the Storage of shelf chemicals and reagents.

8) i. Carry out a brief review of common pathways by which working Chemicals can enter the Body.
   ii. Carry out a detailed study of the Limits of Exposure of given Chemicals.

9) i. Classify the Hazard based on storage, handling, and disposal of chemicals.
   ii. Identification and describe handling protocols for Substances with Greater Hazardous Nature.

10) Carry out detailed investigations on procedural protocols for safe Disposal of Chemicals.
11) i. Carry out study on recommended Safety and Emergency Equipment essential for the safe practices in a Chemistry Laboratory.
   ii. Study the guidelines in the Event of a Chemical Accident or Spill.

12) i. Write detailed description on Fire Safety in the laboratory.
   ii. Carry out investigations of the data regarding Institute Safety Policies: Safety Audits / Inspections.

Part B: Chemistry Lab Standard Operations

1) Carry out exploration on Holding, Handling and use of Common Laboratory Apparatus as per given list of laboratory apparatus (Appendix A).
2) Carry out investigations of various types of apparatus in labs based on material they are made of such as Pyrex Glass (borosilicate Glass) Apparatus, Fused Silica Apparatus: Corning Vycor Glass, Porcelain apparatus, Plastic Apparatus, Metal Apparatus.
3) Understanding the protocol of Cleaning and drying and polishing of Glassware apparatus.
4) Carry out detailed investigations on Identification, diagrammatic representation, set up of Apparatus assemblies and details exploration on operational procedural protocols for glassware apparatus with Interchangeable ground glass joints: Typical Assemblies.
5) i. Carry out calibration of Volumetric/ Graduated Glassware Apparatus along with description on Temperature Standards.
   ii. Carry out Calibration of thermometers.

6) i. Carry out exploration and investigations of working protocol for various heating equipment in laboratory: Burners, Hot Plates, Electrical Heating Mantles, Electric Oven,

Microwave Oven, Muffle Furnace, Infrared lamps, Crucible and Beaker Tongs and Emersion heaters.

ii. Carry out exploration and investigations of working protocol for various Stirring apparatus in laboratory: Stirring rods; Policeman, Boiling rods, Use of Mechanical agitation-Magnetic Stirrer and Mechanical Shaker.

iii. Carefully analyze the Glass, Cork and Rubber Stoppers and investigate their preparation and appropriate applications.

7) i. Carry out detailed investigations of Heating and Cooling Bath, and determine their working ranges and working protocols.
ii. Explore and differentiate between different forms of water for Laboratory Use: Distilled (Grade I to III), De-ionized and tap water, and carry out conductance measurement /other analytical investigations for the differentiation purpose.

8) i. Differentiate among Various types of Filter Paper and explore their applications.
ii. Preparation of a fluted filter paper and its advantages.

iii. Classification of reagents as AR/ GR grade.

9) i. Care and Use of Analytical Balance: Mass and Weight, Two-Pan Balance and Electronic Balance.
ii. Carry out Calibration of weighing balances and accuracy in measurement.

10) Introduction to Chromatographic adsorption: Paper and Thin Layer Chromatography. Preparation of Thin Layer Chromatography (TLC) Plates.

11) i. Use of melting point apparatus. Experimental determination of the melting point using various methods.
ii. Experimental determination of the boiling point using various methods.

12) To Purify given organic solvents.
13) i. Hand on training for working with typical assemblies of apparatus for distillation and refluxing.
ii. Assessment of Fire hazards attending the distillation of inflammable solvents.

14) i. Purification of given solid organic compounds by crystallisation method.
ii. Recrystallization of given non-volatile organic solids and outline the Difficulties encountered in recrystallization process.

15) Removal of traces of colouring matter and use of decolourising carbon.
16) i. Carry out exploration and investigations of working and working protocol for Filtration Apparatus: Filtration with suction.
ii. Explore and imbibe knowledge about types of Vacuum Pump; Water and Oil Pump and their applications.

17) Investigate Conventions for Drying of the recrystallized material.
18) i. Introduction to Gas absorption traps and their importance.
ii. Recrystallization in an atmosphere of inert gas.

19) i. Performing Evaporation of the solvent in the laboratory.
ii. Preparation of anhydrous liquids or solutions of organic compounds in organic solvents.

20) i. Various procedures for the precipitation and washing of the precipitates.
ii. Application of various methods and instruments for drying of solid organic compounds.

21) i. Incineration of Filter paper with precipitate.
ii. Differentiate between various types of centrifugation methods, principle, uses and application of centrifugation method.

iii. Calculation of yields for different chemical processes.

22) In-depth Understanding and Preparation of Chemical Laboratory Reagents.
23) Explore methodologies of Preparation and Storage of Standard Solutions.

Important Instruction Note on working approach:

A minimum of 5 exercises from Part A and 10 exercises from Part B is required to be discussed/performed/investigate. Moreover, exercises related to MSDS, CASRN safety symbols identification is required to be performed mandatorily.

Mandatory exercises:

Part A Exercise No.: 2, 3, 4, 5 and 9

Part B Exercise No.: 1 to 10.

The exercises mentioned above will be performed by the student strictly in accordance with the instructions received and only under the supervision of the teacher concerned.

Essential Readings:

1. Skoog D.A., West D.M., Holler F.J., Stanley R.C., **Fundamentals of analyticalchemistry**, 9th Edition, Cengage Learning.
2. Mendham, J.; Denney, R.C.; Barnes, J.D.; Thomas, M.J.K. (2007), **Vogel's Quantitative Chemical Analysis**, 6th Edition, Prentice Hall.
3. Furniss, B. S; Hannaford, A. J.; Smith, Peter W. G.; Tatchell, A. R; **Vogel's Text Book of Practical Organic Chemistry**, 5th Edition, Longman Scientific and Technical, Longman Group Ltd.
4. Garland, C. W.; Nibler, J. W.; Shoemaker, D. P. (2003), **Experiments in PhysicalChemistry**, 8th Edition, McGraw-Hill, New York.
5. https://iupac.org/
6. https://edu.rsc.org/resources/practical/experiments

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Basic Analytical Techniques

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Basic Analytical Techniques	2	0	0	2	Class XII with Science	NIL

Learning Objectives

- To make students aware of the importance and the concepts of chemical analysis of water and soil samples collected from different sources
- To make them learn few techniques like chromatography, analytical techniques and instrumentation techniques, for example: spectrophotometry and flame photometry.

Learning Outcomes

After studying this course, the student will able to:

- Handle analytical data
- Determine the pH and conductance of soil samples, which can be useful in agriculture sector
- Do quantitative analysis of metal ions in water samples
- Separate ions using chromatographic techniques
- Estimate macronutrients using Flame photometry.

SYLLABUS

Practical: **60 hours**

1. Determination of pH of soil samples collected from college nursery, sports ground and the soil collected from Yamuna River Bank.
2. Determination of conductance of soil samples collected from college nursery and sports ground.
3. Determination of pH of different types of aerated drinks and fruit juices.
4. Estimation of Calcium and Magnesium ions as Calcium carbonate (total hardness) by complexometric titration.
5. Determination of pH, acidity, and alkalinity of water samples collected from different water body/supply sources like Yamuna water, MCD supply water, Groundwater, water samples collected from water sewage treatment plants (Delhi /NCR).
6. Determination of dissolved oxygen (DO) of a water sample collected from different sources (at least two sources).
7. Determination of BOD of water sample collected from different water sources.

8. Paper chromatographic separation (*ascending and circular both*) of the mixture of metal ion (Ni^{2+} and Co^{2+}) and (Cu^{2+} and Cd^{2+}).
9. To study the use of phenolphthalein in trap cases.
10. Estimation of macro-nutrients: Potassium, calcium and magnesium in soil samples by flame photometry.
11. Spectrophotometric determination of Iron in vitamin / dietary tablets / different solutions of iron.
12. Spectrophotometric identification and determination of caffeine and benzoic acid in soft drink.
13. Spectrophotometric determination of cadmium and chromium in the given water sample.
14. Determination of ion exchange capacity of anion / cation exchange resin (using batch procedure if use of column is not feasible).
15. Visit STP plants and different chemical industries.

Essential Readings:

- Svehla, G. (1996), **Vogel's Qualitative Inorganic Analysis**, Prentice Hall.
- Mendham, J.; Denney, R.C.; Barnes, J.D.; Thomas, M.J.K. (2007), **Vogel's Quantitative Chemical Analysis**, 6th Edition, Prentice Hall.
- De, A. K. (2021), **Environmental Chemistry**, 10th edition. New Age International Pvt. Ltd.

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Lab Testing and Quality Assurance

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Lab Testing and Quality Assurance	2	1	0	1	Class XII with Science	NIL

Learning Objectives:

The objective of this course is:

- To introduce the concept of quality check and quality control in chemical industries.

Learning Outcomes:

By the end of the course, the students will be able to:

- Describe role of quality control chemist
- Discuss and demonstrate analytical and separation techniques
- Carry out sample preparation
- Illustrate fundamentals of quality check
- Describe and use safety procedures

SYLLABUS

Unit 1: Introduction **2 hours**

Industry and sub-sectors, standards for manufacturing in life-sciences, drug regulatory agencies, role of quality control chemist, quality management systems

Unit 2: Modern Analytical methods and separation techniques **5 hours**

Gravimetric methods, volumetric methods, electroanalytical methods, spectroscopic methods,chromatographic techniques

Unit 3: Sample preparation **2 hours**

Basics of sample preparation, preservation and storage, standards and guidelines for sample handling, good storage practices

Unit 4: Quality check **6 hours**

Overview, productivity concept, statistical analysis of laboratory data, measurements, calibrations, validation, reference standards and materials, requirements of a calibration lab, fundamentals of advanced QC approaches, Trouble shooting in QC, documentation, audit/ process related query, Quality certifications, Government regulations in industries like pharmaceuticals, food supplements, cosmetics.

Practicals/Hands-on-Training **30 hours**

1. Calibration of glassware
2. Weighing of samples, accuracy of measurements
3. Preparation of TLC plates and separation of amino acids
4. Working protocols of various laboratory instruments-oven, pH-meter, conductivity meter, water baths, muffle furnace, spectrophotometer.
5. Calibration of instruments like colourimeter, pH-meter, conductivity meter, spectrophotometer using reference standards or reference materials.

Suggested exercise: Visit some industries to study the validation of simple procedures.

Essential readings:

- Skoog D.A., West D.M., Holler, F.J., Crouch S.R., **Fundamentals of Analytical Chemistry**, 9th Edition, Cengage learning.
- **Quality control chemist participant manual** prepared by LSSSDC in collaboration with NSDC India.
- iso.org

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Essential Food Nutrients

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical /Practice		
Essential Food Nutrients	2	1	0	1	Class XII with Science	NIL

Learning Objectives

- To develop a basic understanding of the components of food, their source, properties and interactions as well as changes that occur during processing, storage, and utilization

Learning Outcomes

After studying this course, the student will be able to:

- Account for chemistry of foods: composition of food, role of each component
- Recognize some of the reactions and changes in individual food components which occur during processing, handling and storage

SYLLABUS

Theory:

Unit 1: Carbohydrates **3 hours**

Introduction, sources, functions, deficiencies, Structures of monosaccharides and disaccharides: glucose, fructose, galactose; lactose, maltose, sucrose, maltitol, concept of reducing and non-reducing sugars; role of carbohydrates as sweeteners in food; lactose intolerance, galactosemia, dental plaque, overview of carbohydrate metabolism.

Unit 2: Lipids **5 hours**

Introduction, sources, functions, deficiencies, classification (fatty acids, phospholipids, fats & oils, waxes), common fatty acids present in oils and fats, Omega- 3,6,9 fatty acids, trans fats, chemical properties: iodine value, saponification value, effect of frying on fats, changes in fats and oils-rancidity, lipolysis, flavor reversion, auto-oxidation and its prevention.

Unit 3: Proteins **5 hours**

Introduction, sources, functions, deficiencies, protein structure (primary, secondary and tertiary), physico-chemical & functional properties of proteins, food proteins: animal and plant proteins.

Unit 4: Vitamins & Minerals **2 hours**

Vitamins: Introduction, classification: fat-soluble vitamins & water-soluble vitamins.
Minerals: Introduction, classification: macrominerals (Ca, P, Mg) &microminerals (Se, Fe, I, Co, Zn, Cu, Se, Cr). Role of vitamins and minerals in food chemistry.

Practicals/Hands-on Training **30 hours**

1. Determination of moisture in food products by hot air oven-drying method.
2. Colorimetric determination of iron in vitamin/dietary tablets.
3. Estimation of Vitamin C in a given solution/lemon juice/chillies by 2, 6 Dichlorophenol indophenol method.
4. Estimation of total soluble sugar content by ferricyanide method (volumetric analysis).
5. Determination of saponification value of the given fat/oil.
6. Determination of iodine value of the given fat/oil.
7. Qualitative tests for proteins and carbohydrates.
8. Qualitative Estimation of cholesterol by Liebermann Burchard method.

Essential Readings:

Theory:

- deMan, J.M., Finley, J.W., Hurst, W.J., Lee, C.Y. (2018), **Principles of Food Chemistry**,4th Edition, Springer.
- Msagati, T.A.M. (2013), **Chemistry of Food Additives and Preservatives**, Wiley-Blackwell.
- Fennema, O.R. (2017), **Food Chemistry**, 5th Edition, CRC Press.
- Attokaran, M. (2017), **Natural Food Flavors and Colorants**, 2nd Ed., Wiley-Blackwell.
- Potter, N.N., Hotchkiss, J.H, (1995) **Food Science,** 5th Ed., Chapman & Hall.
- Brannen, D., Davidsin, P.M., Salminen, T. Thorngate III, J.H. (2002), **Food Additives**, 2nd Edition, CRC Press.
- Coultate, T. (2016), **Food: The Chemistry of its Components**, 6thEdn., Royal Society of Chemistry.
- Belitz, H. D.; Grosch, W. (2009), **Food Chemistry**, Springer.
- Course: FOOD CHEMISTRY (iasri.res.in)

Practicals:

- Ranganna, S. (2017). **Handbook of analysis and quality control for fruits andvegetable products**, 2ndEdn., McGraw Hill Education
- Sawhney, S.K., Singh, R. (2001), **Introductory Practical Biochemistry**, NarosaPublishing House

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Chemistry of Food Flavors and Colourants

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical /Practice		
Chemistry of Food Flavors and Colourants	**2**	**1**	**0**	**1**	**Class XII with Science**	NIL

Learning Objectives:

The learning objectives of this course are as follows:

- To provide introduction to quality attributes of food such as appearance and flavour.
- To impart an understanding of the chemistry of the flavour as well as colour constituents of foods.

Learning Outcomes:

By the end of the course, the students will be able to:

- Describe mechanisms of flavor perception
- Demonstrate various mechanisms of flavor formation
- Discuss the chemical dimension of flavour.
- Recognize off-flavor defects in foods and strategies to control it.

SYLLABUS

Unit 1: Flavors **9 hours**

Introduction and importance of flavors in food.
Taste & Odour: Structure and physiology of taste organs- tongue, papillae, taste buds, salivary glands, Mechanism of taste and odour perception
Basic Types of taste : Salty, Sweet, Bitter, Sour, Umami taste, Chemical dimensions of basic tastes (sweet, salt, sour, bitter and umami), odour and other sensations (like astringency, coolness, pungency/pungency), Non-nutritive and nutritive sweeteners (including structures of aspartame, saccharin, sucralose, Stevioside), Molecular Theory of Sweetness, Taste Inhibition and enhancement, Chemical dimension of Flavors (peppers, peppermint, coriander, cinnamon, onion), Chemistry of food flavorings: Maillard browning, enzymic browning reactions, caramelisation browning, Off-Flavour in Food (Rancidity in Fats/Oils, Non Enzymic Browning), Control of enzymic browning (acidulants, chelating agents, heat treatment etc)

Unit 2: Food Colours **6 hours**

Introduction, importance, classification: Natural food colourants (Anthocyanins, Carotenoids, Chlorophyll), Examples of Pigments in common food (turmeric, tomato, carrot, orange); Nature-identical colourants (β-Carotene, Canthaxanthin and Riboflavin); Artificial/synthetic colourants: Azo dyes (e.g. amaranth dye, tatrazine, citrous red); Quinoline (e.g. quinoline yellow); Phthalein (e.g. erythrosine); Triarylmethanes and indigoid (e.g. indigo carmine), FD&C Dyes and Lakes.

Practicals/Hands-on-Training **30 hours**

1. Determination of the taste threshold for the different sensations – sweet, salty, sour.
2. Extraction of limonene from orange peels using supercritical carbon dioxide.
3. Quantitative determination of food dyes in powdered drink mixes by spectrophotometric method.
4. Extraction and separation of pigments present in spinach by Thin Layer Chromatography (TLC).
5. Experiment to demonstrate the enzymic browning and its prevention.
6. Determination of rancidity of edible oils by Kriess Test.
7. Estimation of carotenoids in sample by colorimetric method.

Essential readings:

Theory:

- DeMan, J.M., Finley, J.W., Hurst, W.J., Lee, C.Y. (2018), **Principles of Food Chemistry**,4th Edition, Springer.
- Msagati, T.A.M. (2013), **Chemistry of Food Additives and Preservatives**, Wiley-Blackwell.
- Fennema, O.R. (2017), **Food Chemistry**, 5th Edition, CRC Press.
- Attokaran, M. (2017), **Natural Food Flavors and Colorants**, 2nd Ed., Wiley-Blackwell.
- Potter, N.N., Hotchkiss, J.H, (1995) **Food Science,** 5th Ed., Chapman & Hall.
- Brannen, D., Davidsin, P.M., Salminen, T. Thorngate III, J.H. (2002), **Food Additives**, 2nd Edition, CRC Press.
- Coultate, T. (2016), **Food: The Chemistry of its Components**, 6th Edn., Royal Society of Chemistry.
- Belitz, H. D.; Grosch, W. (2009), **Food Chemistry**, Springer.
- Course: FOOD CHEMISTRY (iasri.res.in)

Practicals:

- Ranganna, S. (2017). **Handbook of analysis and quality control for fruits and vegetable products**, 2nd Edn., McGraw Hill Education
- Sawhney, S.K., Singh, R. (2001), **Introductory Practical Biochemistry**, Narosa Publishing House

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Chemistry of Cosmetics and Hygiene Products

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical /Practice		
Chemistry of Cosmetics and Hygiene Products	2	0	0	2	Class XII with Science	NIL

Learning Objectives

- To introduce the concept of cosmetics in terms of chemistry and their formulation.
- To make students understand the role of each ingredients in the preparation of the cosmetic products.
- To give an idea about the role of herbal ingredients in the making of any cosmetic product.

Learning Outcomes

After studying this course, the student will:

- Be familiar with the basic principles of various cosmetic formulations
- Be aware of different ingredients and their roles in cosmetic products.
- Appreciate the role of herbal ingredients in various cosmetic products
- Use safe, economic and body-friendly cosmetics
- Prepare new innovative formulations to achieve the aimed efficacies and effects

SYLLABUS

Practicals/Hands-on-training **60 hours**

1. Definition, History and Classification of cosmetic & cosmeceutical products.

Skin Care Products: Basic structure and function of skin. Principles of formulation of skin care products. Role of herbs in Skin Care: Aloe and turmeric. General Ingredients and preparation of

(a) Preparation of Talcum powder (chemical based and herbal)

(b) Face cream/ vanishing cream/ cold cream/ suntan cream/lather shaving cream (any two)

(c) Body lotion

2. **Hair Care Products**: Basic structure of hair and classification of hair. Principles of formulation of Hair care products. Types of shampoo and conditioners. Role of herbs in Hair care: Henna and amla. Role of primary and secondary surfactants in shampoo. General Ingredients and preparation of

(a) Shampoo (chemical based and herbal)

(b) Conditioners

3. **Hand Care and hygiene Products**: Principles of formulation of hand sanitizers and hand wash. General Ingredients and preparation of:

(a) Hand wash

(b) Hand sanitizer

4. **Nail preparation**: Structure of nail, Nail lacquers, Nail polish remover. General Ingredients and preparation of:

(a) Nail polish and nail polish remover

5. **Personal hygiene products**: Total fatty matter, alkali content and pH of soaps. Bathing soap and toilet soap. Antiperspirants and deodorants. General Ingredients and preparation of

(a) Soaps

(b) Cream Soaps

6. **Oral hygiene products**: **Common problem associated with teeth and gums.Role of herbs in oral care: Neem and clove.** Principles of formulation of Oral hygiene products. Flavours and essential oils. General Ingredients and preparation of

(b) Tooth powder (chemical based and herbal)

(c) Tooth paste

Essential Readings

- Barel, A.O.; Paye, M.; Maibach, H.I. (2014), **Handbook of Cosmetic Science and Technology,** CRC Press.
- Garud, A.; Sharma, P.K.; Garud, N. (2012), **Text Book of Cosmetics**, Pragati Prakashan.
- Gupta, P.K.; Gupta, S.K. (2011), **Pharmaceutics and Cosmetics**, Pragati Prakashan
- Butler, H. (2000), **Poucher's Perfumes, Cosmetic and Soap**, Springer

Suggestive Readings:

- Flick, E.W. (1990), **Cosmetic and toiletry formulations,** Noyes Publications / William Andrew Publishing.
- Natural Ingredients for Cosmetics; EU Survey 2005
- Formulation Guide for cosmetics; The Nisshin OilliO Group, Ltd.

- Functional Ingredients & Formulated Products for Cosmetics & Pharmaceuticals; NOF Corporation

Examination scheme and mode:
Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Green Methods in Chemistry

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical /Practice		
Green Methods in Chemistry	2	0	0	2	Class XII with Science	NIL

Learning Objectives:

The learning objectives of this course are as follows:

- To create awareness about the chemistry that is good for human health and the environment.
- To provide thorough knowledge of the green chemistry principles, and new remediation technologies for the cleaning up of hazardous substances.
- To develop basic skills to be able to design, develop and run chemical processes in a sustainable way.

Learning Outcomes:

After studying this course, the student will be able to:

- Design and develop materials/ processes that reduce the use and generation of hazardous substances in industry.
- Describe how injudicious use of chemicals can have an adverse/potentially damaging effect on humans and the environment.
- Propose ideas for innovative approaches to environmental and societal challenges.
- Critically analyse the existing traditional chemical pathways/processes and creatively think about bringing environmentally benign reformations in these protocols.
- Convert biomass into valuable chemicals through green technologies.

SYLLABUS

Practicals/Hands-on Training **60 hours**

1. Definition and Importance of green chemistry. Introduction to the prevention of waste/ by products and waste/ pollution prevention hierarchy. Provide the scheme for the traditional as well as green method for the synthesis of ibuprofen and ask students to compare the amount and hazards of waste generated in both the processes.

2. Principle and calculation of atom economy. Use of molecular model kit to stimulate the reaction

to investigate how the atom economy can illustrate Green Chemistry.

Preparation of propene by two methods can be studied

(I) Hoffman elimination

(II) Dehydration of propanol

The other types of reactions, like addition, elimination, substitution and rearrangement should also be studied for the calculation of atom economy

3. Prevention/ minimization of hazardous/ toxic products reducing toxicity. Risk = (function) hazard x exposure.

(a) Nitration of salicylic acid using green method $Ca(NO_3)_2$

(b) Preparation and characterization of nanoparticles of gold using tea leaves/silver nanoparticles using plant extracts.

(c) Preparation of dibenzalacetone by cross aldol condensation reaction using base catalysed green method

(d) Acetylation of primary aromatic amine using the green method.

4. Use of Green solvents and comparison of greenness of solvents:

(a) Explain about supercritical fluids with special reference to carbon dioxide. Extraction of D-limonene from orange peel using liquid CO_2 prepared from dry ice

(b) Introduction to water as a solvent for chemical reactions. preparation of Manganese (III) acetylacetonate using green method

(c) Advantages and application of solventless processes in organic reactions.

(i) Benzil- Benzilic acid rearrangement in solid State under solvent-free Condition.

(ii) Mechanochemical solvent free, solid–solid synthesis of azomethine using *p*- toluidine and *o*-vanillin/*p*-vanillin

5. Energy requirements for reactions – alternative sources of energy: use of microwaves and photochemical energy.

(a) Photoreduction of benzophenone to benzopinacol in the presence of sunlight.

(b) Microwave assisted ammonium formate-mediated Knoevenagel reaction: *p*-anisaldehyde, ethyl cyanoacetate, ammonium formate.

6. Selection of renewable starting material rather than depleting, Illustrate with few examples such as biodiesel and polymers from renewable resources (such as green plastic). Preparation of biodiesel from waste cooking oil and characterization.

7. Importance of using catalytic reagents in preference to stoichiometric reagents; catalysis and green chemistry, comparison of heterogeneous and homogeneous catalysis, biocatalysis, asymmetric catalysis and photocatalysis.

(a) Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide

(b) Rearrangement of diazoamino benzene to *p*-aminoazo benzene using K10 montmorillonite clay

8. Students should be asked to prepare a presentation/project based on any of the following topics:

- Bhopal Gas Tragedy and safer route to carbaryl synthesis
- Flixiborough accident and safer route to cyclohexanol
- Use of Surfactants for SC-CO_2 for precision cleaning and dry cleaning of garments replacing PERC.
- A brief study of Green Chemistry Challenge Awards (Introduction, award categories and study about five last recent awards
- Healthier Fats and oils by Green Chemistry: Enzymatic Interesterification for production of No Trans-Fats and Oils.
- Synthesis of anti-tuberculosis drug Paramycin from waste water stream
- Syntheses of vitamin D_3 using photochemical energy
- Greener Manufacturing of Sitagliptin Enabled by an Evolved Transaminase
- Microwave assisted solvent free synthesis of aspirin
- Synthesis of 6-Aminopenicillanic Acid (6-APA) from penicillin G using biocatalyst.

Essential Readings:

Theory:

- Anastas, P.T., Warner, J.C. (2014), Green Chemistry, Theory and Practice, Oxford University Press.
- Lancaster, M. (2016), Green Chemistry: An Introductory Text, 3rd Ed., RSC Publishing.
- Cann, M.C., Connely, M. E. (2000), Real-World cases in Green Chemistry, American Chemical Society, Washington.
- Matlack, A.S. (2010), Introduction to Green Chemistry, 2nd Ed., CRC Press.
- Alhuwalia, V.K.; Kidwai, M.R. (2012), New Trends in Green chemistry, Kluwer Academic Publishers, Springer.
- Sidhwani, I.T; Sharma, R.K. (2020), An Introductory Text on Green Chemistry, Wiley India Pvt Ltd.
- Etzkorn, F. A . (2019), Green Chemistry: Principles and Case Studies, Royal Society of Chemistry.

Practicals:

- Kirchoff, M., Ryan, M.A. (2002), **Greener approaches to undergraduate chemistry experiment**, American Chemical Society, Washington DC.
- Sharma, R.K., Sidhwani, I.T., Chaudhari, M.K. (2013), **Green Chemistry Experiments: A monograph**, I.K. International Publishing House Pvt Ltd. New Delhi.
- Pavia, D.L., Lamponam, G.H., Kriz, G.S.W. (2006), **Introduction to organic Laboratory Technique- A Microscale approach**, 4th Edition, Brooks-Cole Laboratory Series for Organic chemistry.
- Sidhwani, I.T. ; Saini, G.; Chowdhury, S. **Wealth from Waste: A green method to produce biodiesel from waste cooking oil and generation of useful products from**

waste further generated. University of Delhi, Journal of Undergraduate Research and Innovation, Volume 1, Issue 1, February 2015, ISSN: 2395-2334.

- Sharma, R. K., Gulati, S., Mehta, S. (2012), **Preparation of Gold Nanoparticles Using Tea: A Green Chemistry Experiment,** Journal of Chemical Education, 89 (10), 1316-1318.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Forensic Chemistry

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (ifany)
		Lecture	Tutorial	Practical /Practice		
Forensic Chemistry	2	1	0	1	Class XII with Science	NIL

Learning Objectives

- To introduce students to this fascinating branch of science and familiarize them with important concepts like fingerprints, explosives/arson, drugs and their detection.

Learning outcomes

After studying this course, the student will be able to:

- Describe latent fingerprints, various methods of detection of latent fingerprints, explosive analysis in forensic science, collection and preservation of evidence from crime scene etc

SYLLABUS

Theory:

Unit 1: History of Development of Forensic Science in India **2 hours**

Definitions, Scope and Need of forensic science, Ethics in forensic science, History of forensic science, Basic principles of forensic science, Organizational structure of forensic science laboratories, Different branches in forensic science

Unit 2: Fingerprints **5 hours**

Definition, History of fingerprint identification, Fingerprint as forensic evidence, Visible Finger marks, Latent Finger marks, ten-digit classification, Methods of Development of latent fingerprints using conventional methods–Powdering (Black and grey, fluorescent and magnetic), Methods of development of latent fingerprint using chemical method (iodine fuming, silver nitrate, Ninhydrin, Vacuum metal deposition), Automated Fingerprint identification system (AFIS), Poroscopy and Edgescopy

Unit 3: Forensic Chemistry **8 hours**

Scope & significance of Forensic Chemistry, Types of cases/exhibits received for analysis. Trap Cases: Collection, and Preliminary analysis of evidence in trap cases.

Alcoholic Beverages: Types of alcohols, country made liquor, illicit liquor, denatured spirits, Indian made foreign alcoholic and non-alcoholic beverages.

Dyes: Scope & Significance of dyes in crime investigation, analysis of ink by TLC and UV visible spectrophotometry. Petroleum products and their adulterations: Chemical composition of various

fractions of Petroleum Products, Analysis of petrol, kerosene, diesel.
Fire/Arson and Explosives Fire: Introduction to Fire & Arson, origin of fire, Chemistry of Fire, Fire tetrahedron,Firefighting operations, preservation of fire scene, collection of evidences, Seat offire, cause of fire, motives, Analysis of fire debris, Case studies related to fire and Arson. Explosiveand Explosion: Scope & significance of explosive analysis in forensic science, Types of explosives, deflagration and detonation, explosive trains, collection, preservation and forwarding of exhibits, preliminary analysis of explosives. Dos and Don'ts. Case studies related to explosives.
Drugs of abuse: Classification, including designer drugs. Ill effects of drugs of abuse, Preliminaryand conformatory tests.

Practicals/Hands-onTraining **30hours**

1. Development of fingerprint through conventional powder method.
2. Development of fingerprint through chemical methods.
3. To check the alcohol presence in different liquor.
4. Phenolphthalein test for trap cases.
5. Identification of Handwriting Individual Characteristics.
6. Study of Disguise in handwriting.
7. TLC of amino acids

Essential/recommended readings

- Saferstein, R. (1990) Criminalistics, Prentice Hall, New York.
- Basic Principles of Forensic Chemistry by JaVed I. Khan • Thomas J. Kennedy Donnell
  R. Christian, Jr.
- Fundamentals of FINGERPRINT ANALYSIS Hillary Moses Daluz
- Clarke's Analysis of Drugs and Poisons 3rd Ed.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

ENVIRONMENTAL IMPACT AND RISK ASSESSMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
ENVIRONMENTAL IMPACT AND RISK ASSESSMENT	02	0	0	02	Class XII with Science	NA

Learning Objectives

- To gain insights into the concepts of environmental impact assessment (EIA) and its relevance for sustainable development
- To acquire knowledge of the socio-ecological and economic perspectives of any developmental project.
- To evaluate methodologies to conduct and analyze EIA acceptable per prevalent regulations

Learning outcomes

The Learning Outcomes of this course are as follows.
After studying the course, the students will be able to:

- Conduct EIA of any developmental project and analyze its environmental and other implications
- Serve as consultant to different agencies working on EIA and a developmental plan
- Evolve strategies to ensure development and conservation hand-in-hand
- Formulate sustainable development strategies for any development plan varying in scale
- Identify and classify different development projects based on their sales and impacts on the environment

SYLLABUS

Practical **(02 Credits: 60 hours)**

1. Based on the given project details, classify them as Category A and Category B1 and B2 projects.
2. Prepare the scope of any recent developmental project of Category A which received Environmental Clearance.
3. To prepare a questionnaire and compilation of primary data to study the scope of the project based on public participation.
4. Identify the impacts due to a Mining Project using the checklist method.
5. Based on the impacts identified in Activity 4, formulate mitigating measures for the project.
6. Determine the impacts due to a large-scale hydropower project in a given state using the matrix method and geo-spatial data,
7. Prepare an environmental management plan for a mining project.
8. To conduct a public hearing for any project and prepare a draft for the process.
9. Prepare a brief life cycle assessment of a smartphone.
10. Prepare a brief EIA report of a River Valley Project.

Teaching learning interface for practical skills

To impart training on technical and analytical skills related to the course objectives, a wide range of learning methods will be used, including (a) laboratory practicals; (b) field-work exercises; (c) customized exercises based on available data; (d) survey analyses; and (e) developing case studies; (f)

demonstration and critical analyses; and (h) experiential learning individually and collectively.

Prospective Sectors:
As per the Ministry of Environment, Forests, & Climate Change (MoEF&CC), Govt. of India, ~30 sectors require EIA for Environmental Clearance before any project activity. Some of them include Mining, Oil and gas exploration, development & production, River valley, hydel, drainage and irrigation projects, thermal Power plants, Nuclear power projects, Coal washeries, Mineral, Metallurgical industries, Cement plants, Petroleum industry, Coke oven plants, Asbestos milling, Chlor-alkali industry, Soda ash Industry, Chemical fertilizers, Pesticides industry, Synthetic organic chemicals industry, Distilleries, Integrated paint industry, Pulp & paper industry, Induction/arc furnaces, Air ports, All ship breaking yards, Industrial estates, Common hazardous waste treatment, storage and disposal facilities, Highways, railways, transport terminals, mass rapid transport systems, Building and large construction projects, Townships, and area development projects.

Essential/recommended readings

- EIA 2020. Ministry of Environment, Forest and Climate Change, Draft Environment Impact Assessment Notification, 2020, <http://environmentclearance.nic.in/writereaddata/om/6998FGGHOI_Gaztte_EIA2020_Comments.pdf>.
- Glasson, J. and Therivel, R., 2013. Introduction to Environmental Impact Assessment. Routledge.
- MacKinnon, A.J., Duinker, P.N. and Walker, T.R., 2018. The Application of Science in Environmental Impact Assessment. Routledge.
- Mareddy, A.R. (2017) Environmental Impact Assessment Theory and Practices, Butterworth Heinemann.

Suggested readings

- Judith, P. 1999. Handbook of Environmental Impact Assessment. Blackwell Science.
- Lawrence, D.P., 2013. Impact assessment: practical solutions to recurrent problems and contemporary challenges. John Wiley & Sons.
- Marriott, B. 1997. Environmental Impact Assessment: A Practical Guide. McGraw-Hill, New York, USA.
- Petts, J. (1999). Handbook of Environmental Impact Assessment. Vol. 1, Blackwell Science.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

SUSTAINABILITY REPORTING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
SUSTAINABILITY REPORTING	02	0	0	02	Class XII	NA

Learning Objectives

- To gain insights into the step-by-step process of writing a sustainability report using internationally acceptable standards.
- To evolve a holistic view of sustainability and understand the carrying capacity of ecosystems for human needs.
- To acquire skills to address sustainability challenges in a global context.
- To evaluate industrial/organizational processes/programmes based on the interconnections among economic, environmental, and social activities

Learning outcomes

The Learning Outcomes of this course are as follows.
After studying the course, the students will be able to:

- Develop a multi-disciplinary and holistic perspective of sustainability and identify key factors determining sustainability and associated benefits
- Write sustainability reports using universal, sector, and topic standards
- Explain sustainability challenges and effective methods to communicate it to different stakeholders
- Apply sustainability concepts, and GRI Standards for sustainable industries
- Serve as environmental consultants to different industries
- Advise governments on sustainable environmental polices

SYLLABUS

Practical/Hands-on Exercises **(02 Credits: 60 hours)**

1. Investigate the framework for sustainability reporting outlined by global reporting initiatives (GRI)
2. Analyse universal, sector, and topic standards given by GRI
3. Develop sustainability reporting of your institute
4. Examine and report the sustainability of your residential society or residential area around your College
5. Compare and contrast sustainability reporting of the market in your neighbourhood and the selected mining industry
6. Visit a thermal power plant in and around your city and write its sustainability report

7. Using appropriate standards, evaluate the sustainability of a Cement Factory in your city
8. Field survey of a waste treatment facility in your city, assess their sustainability and give recommendations if required.
9. Analyze the potential and limitations of certified tools and software recommended by the GRI for sustainability reporting
10. Examine and evaluate sustainability reports available on different sectors and topics worldwide and give appropriate recommendations, if any.

Teaching learning interface for practical skills

To impart training on technical and analytical skills related to the course objectives, a wide range of learning methods will be used, including (a) laboratory practicals; (b) field-work exercises; (c) customized exercises based on available data; (d) survey analyses; and (e) developing case studies; (f) demonstration and critical analyses; and (h) experiential learning individually and collectively.

Prospective Sectors:

All Multi-National Companies, (b) Environmental and Sustainability Consultancies, (c) Environmental NGOs, (d) World Bank, and (e) UNDP

Essential/recommended readings

- Bini, L. and Bellucci, M., 2020. Integrated Sustainability Reporting: Linking Environmental and Social Information to Value Creation Processes. Springer.
- A Short-Introduction to GRI Standards. https://www.globalreporting.org/media/wtaf14tw/a-short-introduction-to-the-gri-standards.pdf
- Evaluating National Policies on Corporate Sustainability Reporting https://wedocs.unep.org/handle/20.500.11822/9435
- Gutterman, A.S., 2021. Sustainability Reporting and Communications. Business Expert Press.
- Sustainability Reporting in the Financial Sector: A Governmental Approach https://wedocs.unep.org/handle/20.500.11822/17375
- United Nations Environment Program (UNEP), 2015. Raising the bar: Advancing environmental disclosure in sustainability reporting.

Suggested readings

- Greiling, D., Traxler, A.A. and Stötzer, S., 2015. Sustainability reporting in the Austrian, German and Swiss public sector. International Journal of Public Sector Management.
- https://www.globalreporting.org/reporting-support/reporting-tools/certified-software-and-tools/

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

ENVIRONMENTAL AUDITING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
ENVIRONMENTAL AUDITING	02	0	0	02	Class XII	NA

Learning Objectives

- To gain an understanding of the fundamental principles and components of environmental auditing
- To train in conducting an environmental audit in any organization/ institution
- To implement critical thinking toward environmental problems and formulate local solutions for their mitigation

Learning outcomes

After studying the course, the students will be able to:

- Conduct an environmental audit in a scientific manner
- Recommend organizations to adopt specific sustainable strategies
- Serve as catalyst to evolve sense of ownership and responsibility among organizations/industries towards solving local environmental problems.
- Pursue environmental auditing for higher studies and a future career.

SYLLABUS

Practical/Hands-on Exercises **(02 Credits: 60 hours)**

1. Prepare a working plan (in the form of a flowchart/ graphical abstract) for the environmental audit of any organization/ institution focusing on pre-audit, on-site and post-audit objectives and activities
2. Prepare a brief profile of any selected organization/ institution (Area, land use, green cover, organizational setup, demography etc.) and discuss its environmental policy and the environmental management systems
3. Prepare an interpretive electricity consumption report of the organization/ institution over a five-year period (both actual or arbitrary data can be used).
4. Prepare an interpretive water consumption report of the organization/ institution over a five-year period (both actual or arbitrary data can be used). Also, identify the sources of wastewater discharge and its management, if any.
5. Survey the campus and prepare a list of the plant/ animal (or both) diversity, highlighting its importance and threats faced.

6. Prepare a monthly air quality level dataset nearest to the institution's location, extracting data from the National Air Quality Index (CPCB) website. Prepare a report on causes of variation and measures taken by an organization to improve air quality levels
7. Prepare a comprehensive assessment report of Solid Waste Management at the organization/ institution highlighting compliance to Solid Waste Management Rules, 2016.
8. Formulate a scientifically sound protocol for identifying and disposing of e-waste and hazardous waste at any organization based on E-waste (management) rules, 2016 and Hazardous waste (management) rules, 2016.
9. Examine various environment-related practices and activities of the organization/ institution that have impacted the neighbouring communities and prepare a social audit questionnaire for studying the impact.
10. Compile the data, results, and analysis of all previous practicals and prepare a detailed environmental audit report of your selected organization/ institution.

Teaching learning interface for practical skills

To impart training on technical and analytical skills related to the course objectives, a wide range of learning methods will be used, including (a) laboratory practicals; (b) field-work exercises; (c) customized exercises based on available data; (d) survey analyses; and (e) developing case studies; (f) demonstration and critical analyses; and (h) experiential learning individually and collectively.

Prospective Sectors:

(a) Universities/Colleges, (b) Environmental Consultancies, (c) Environmental NGOs, and (d) Indian Audit & Revenue Departments

Essential/recommended readings

- Cahill, L.B (2017). Environmental Health and Safety Audits: A Compendium of Thoughts and Trends, 2nd Edition, Bernan Press.
- Council, N.C., Britain, G. and Unit, E.F., 2011. Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit. Nature Conservancy Council.
- Ho G, Anda, M., Brennan, J., 2015. Water Auditing and Water Conservation. IWA Publishing
- Pain, S.W., 2010. Safety, Health, and Environmental Auditing: A Practical Guide. CRC Press.
- Thuman, A., Niehus, T., Younger, W.J., 2012. Handbook of Energy Audits, 9th ed. Routledge, Taylor and Francis
- Van Guilder, C.V., 2014. Environmental Audits. Mercury Learning & Information.

Suggested readings

- Barton, H., and Bruder N., 1993. A Guide to Local Environmental Auditing. Routledge, Taylor and Francis

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

PROSPECTING E-WASTE FOR SUSTAINABILITY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Prospecting E-Waste for Sustainability	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

- To provide in-depth knowledge on the effective mechanisms to regulate the generation, collection, and storage of e-waste
- To gain insights into the internationally/nationally acceptable methods of transport, import, and export of e-waste within and between countries
- To develop a holistic view on recycling, treatment, and disposal of e-waste and related legislative rules.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to holistically analyze the environmental impacts of e-waste
- After studying this course, students will be able to apply the skills and various concepts for sustainable management of e-waste
- After studying this course, students will be able to decipher the role of various national and international regulations for e-waste management
- After studying this course, students will be able to provide specific recommendations for improved methods for handling e-waste at different stages such as generation, collection, storage, transport, and recycling

SYLLABUS

Practical/Hands-on Exercises **(02 Credits: 60 hours)**

1. Identification of e-waste and its types
2. Composition of e-waste and segregation- from the material provided
3. Dismantling of e-waste and handling process
4. Visit a nearby e-waste handling facility
5. Environmental protection laws and producer's responsibility for e-waste management
6. Build an understanding of how regulatory mechanisms can be utilized in the management of e-waste in educational institutions.
7. Discussion on plausible ways and implementation of e-waste reduction at the source
8. Evaluation of the status of e-waste handling at your institution. Suggest potential solutions as per the existing norms of E-Waste (Management) Rules, 2016 and beyond.

9. Estimate how recycling of e-waste in metro cities will go in sync with the circular economy
10. Develop an understanding and itinerary of the process for procuring e-waste import permissions.
11. Inventory of the e-waste disposal mechanisms.
12. Study the evolution of e-waste management rules and its implementation- Hazardous Waste Rules, 2008, E-waste (Management and Handling) Rules, 2011; and E-Waste (Management) Rules, 2016
13. Study the international laws on e-waste management- the international legislations: The Basel Convention; The Bamako Convention; The Rotterdam Convention; Waste Electrical and Electronic Equipment (WEEE) Directive in the European Union; Restrictions of Hazardous Substances (RoHS) Directive

Teaching and learning interface for practical skills:

To impart training on technical and analytical skills related to the course objectives, a wide range of learning methods will be used, including (a) laboratory practicals; (b) field-work exercises; (c) customized exercises based on available data; (d) survey analyses; and (e) developing case studies; (f) demonstration and critical analyses; and (h) experiential learning individually and collectively.

Prospective sector(s):

- Electric and electronic industries,
- E-waste Recycling Unites,
- Private entrepreneurs,
- Environmental consultancies,
- Pollution Boards, and
- Environmental NGOs

Suggested Readings:

- Hester, R.E. and Harrison, R.M., 2009. Electronic Waste Management: Design. Analysis and Application. Royal Society of Chemistry Publishing. Cambridge, UK.
- Fowler, B.A., 2017. Electronic Waste: Toxicology and Public Health Issues. Academic Press.
- Gaidajis, G., Angelakoglou, K. and Aktsoglou, D., 2010. E-waste: environmental problems and current management. Journal of Engineering Science and Technology Review, 3(1), pp.193-199.
- Janyasuthiwong, S., 2020. Metal Removal and Recovery from Mining Wastewater and E-waste Leachate. CRC Press.

Examination scheme and mode:

Evaluation scheme and mode ll be as per the guidelines notified by the University of Delhi.

DEVELOPING SUSTAINABILITY PLANS FOR A BUSINESS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Developing Sustainability Plans for a Business	**2**	**0**	**0**	**2**	**Class XII**	**NA**

Learning Objectives

The Learning Objectives of this course are as follows:

- To assess the status of integration of social and ecological values into business practices
- To determine strengths and weaknesses in linkages between people, planet, and profit during business practices
- To correlate the changes in ecological footprint with growth in corporate responsibility
- To recommend strategies to improve current CSR practices for environmental conservation and enhance the return on investment of the organization

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to develop CSR plans to balance ecological security with economic success.
- After studying this course, students will be able to evolve methods for the financial stability of different organizations/companies
- After studying this course, students will be able to develop a framework to reduce energy consumption, adopt renewable resources and integrate waste management strategies among employees
- After studying this course, students will be able to design sustainable business plans having major positive impacts on plant and next-generation business setting

SYLLABUS OF SEC

Practical/Hands-on Exercises **(02 Credits: 60 hours)**

- Determine strategies to reduce carbon footprint and improve supply chain efficiency of an organization
- Assess the current status of renewable energy use and investment and develop strategies to become carbon negative in the next decade.
- Identify opportunities for sustainable alternatives for an environmental cause that aligns well with the organizational goal and areas of philanthropic investments

- Analyze material use at different stages of organizational process based on a set of sustainable principles and suggest environment-friendly alternatives to reduce waste
- Calculate the water footprint of the organization and develop methods for mindful water consumption to improve human health and reduce the economic cost
- Examine the current status of infrastructure with respect to the energy-efficient lighting system and evolve strategies for shifting to 100% renewable energy
- Determine the ecological impact of current infrastructure using guiding principles of LEED (Leadership in Energy and Environmental Design) Certification and identify areas for biophilic design, green spaces, and work conditions
- Optimize to reduce waste by improved methods of handling and disposing of waste
- Develop guidelines for eco-friendly transportation to reduce fuel usage and maximize route efficiency
- Eco-innovation in developing energy alternatives and providing solutions to complex environmental challenges
- Document the biological wealth (especially plants, insects, and birds) of an organization and develop the green design to maintain and enrich the biological wealth

Teaching and learning interface for practical skills:

To impart training on technical and analytical skills related to the course objectives, a wide rangeof learning methods will be used, including (a) laboratory practicals; (b) field-work exercises; (c) customized exercises based on available data; (d) survey analyses; and (e) developing case studies; (f) demonstration and critical analyses; and (h) experiential learning individually and collectively.

Prospective sector(s):

(a) Environmental Consultancies, (b) Sustainability Advisors, (c) All Multi-National Large-Scale Industries, and (d) Environmental NGOs

Suggested readings

- Calkins, M., 2012. The Sustainable Sites Handbook: A Complete Guide to the Principles, Strategies, and Best Practices for Sustainable Landscapes (Vol. 39). John Wiley & Sons.
- Daniels, T., 2017. The Environmental Planning Handbook: For Sustainable Communities and Regions. Routledge.
- Davoudi, S., Cowell, R., White, I. and Blanco, H. eds., 2019. The Routledge Companion to Environmental Planning. Routledge.
- Quaddus, M.A. and Siddique, M.A.B. eds., 2013. Handbook of Sustainable Development Planning: Studies in Modelling and Decision Support. Edward Elgar Publishing.
- USEPA, 2012. Planning for Sustainability: A Handbook for Water and Wastewater Utilities.

Examination scheme and mode:

Evaluation scheme and mode ll be as per the guidelines notified by the University of Delhi.

PCB Designing and Fabrication

CREDIT DISTRIBUTION, ELIGIBILITY AND PREREQUISITES OF THE COURSE

Course title& Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
PCB Designing and Fabrication	2	0	0	2	Class XII	NIL

Learning Objectives

The Learning Objectives of the course are as follows:

- To give a comprehensive understanding and hands-on exposure to the various processes, industrial tools, protocols, and design specifics which are involved in PCB Designing
- To enable the students to design an electronic printed circuit board for a specific application using industry-standard software after going through the complete procedural steps of developing circuit schematic, board files, image transferring, assembly, soldering, and testing.

Learning Outcomes

After Studying this course, the student will be able to:

- Identify the various types of devices/components that may be mounted on PCB
- Understand the PCB layout techniques for optimized component density and power saving.
- Perform design and printing of PCB with the help of various image transfer and soldering techniques
- Understand the current trends and scope of the PCB industry

Syllabus

Practical

Unit 1: PCB Fundamentals **12 hours**

PCB Advantages, components of PCB, Electronic components, Microprocessors and Microcontrollers, IC‘s, Surface Mount Devices (SMD). Classification of PCB - single, double, multilayer, and flexible boards, Manufacturing of PCB, PCB standards.

Unit 2 : Schematic & Layout Design **16 hours**

Schematic diagram, General, Mechanical, and Electrical design considerations, Placing and Mounting of components, Conductor spacing, routing guidelines, heat sinks and package density, Net list, creating components for a library, Tracks, Pads, Vias, power plane, grounding.

Unit 3: PCB Design Processes **20 hours**

Design automation, Design Rule Checking; Exporting Drill and Gerber Files; Drills; Footprints and Libraries Adding and Editing Pins, copper-clad laminates materials of copper-clad laminates, properties of laminates (electrical & physical), types of laminates, soldering techniques. Film master preparation, Image transfer, photo printing, Screen Printing, Plating

techniques, Etching techniques, Mechanical Machining operations, Lead cutting and Soldering Techniques, Testing, and quality controls.

Unit 4 : PCB Technology **12 hours**

Introduction of PCB prototyping machines, Schematic Entry, PCB Parts creation, Auto Routing, Post Design, Brief overview of various models available, Recent Trends, and environmental concerns in the PCB industry.

Exercises

PCB Designing, Fabrication, Component Mounting and Testing using Standard Procedures (Hardware)

A. Analog Electronic Circuits

1. Verification of Thevenin theorem
2. Designing of RC Low Pass Filter and High Pass Filter circuits
3. To study current-Voltage characteristics of a p-n junction diode (forward bias and reverse bias)
4. Designing of Centre tapped full wave rectifier – without and with shunt capacitance filter.
5. Simple circuit to glow an LED
6. Design, fabrication, and testing of a 9 V power supply with Zener regulator
7. Design and study of voltage divider biasing.
8. Designing of a CE based amplifier of given gain

B. Digital Electronic Circuits

1. To verify and design AND, OR, NOT and XOR using NAND gates
2. Design a Half adder and Full Adder
3. Design a Half Subtractor and Full Subtractor

PCB Design Softwares recommended

- KiCAD (Open Source Electronics Design Automation Suite) https://www.kicad.org/
- EasyEDA (Online PCB Design Tool) https://easyeda.com/
- PADS - Siemens EDA (PCB Design Software) https://eda.sw.siemens.com/en-US/pcb/pads/
- Any other similar PCB designing software

Essential/recommended readings

- Printed Circuit Board – Design & Technology, Walter C. Bosshart, Tata McGraw Hill, 2008.
- Printed Circuit Board –Design, Fabrication, Assembly & Testing, R.S. Khandpur, First Edition, Tata Mcgraw-Hill Education Pvt. Ltd., 2005.
- Printed Circuit Board Design Using Autocad, Chris Schroeder, Newnes Publisher, 1998.
- Printed Circuits Handbook, Clyde F. Coombs, Jr, Happy T. Holden, Sixth Edition, Publisher: McGraw-Hill Education, 2016.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Electronic Product Testing

CREDIT DISTRIBUTION, ELIGIBILITY AND PREREQUISITES OF THE COURSE

Course title& Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Electronic Product Testing	2	0	0	2	Class XII	NIL

Course Learning Objectives

The Learning Objectives of the course are as follows:

- To enable students for testing of various electronic and electrical components and instruments such as diode, transistor, transformer, switches, fuses, cables, CRO, multimeters, voltmeter, ammeters etc.
- To give an insight upon the SMD and its soldering and de-soldering, EDS.
- To help students to have insight knowledge of SMPS, UPS and batteries along with maintenance of consumer electronics gadgets like computers, Audio Amplifiers, Induction Top, Solar Panel etc.
- To enhance their capabilities of assembling, fault diagnosis and rectification in a systematic way. To enrich students about reliability and quality control standards of equipment.

Course Learning Outcomes

After studying this course, the student will be able to:

- Test different types of electronic and electrical components and instruments.
- Practice soldering and de-soldering processes with correct methods.
- Testing of SMPS, UPS, Inverters and batteries.
- Identify faults in consumer electronics gadgets such as audio amplifiers, computers, Induction top, Microwave, solar panel.

Syllabus

Practical

Unit 1 : Introduction **16 hours**

Overview of Basic Measuring Instruments: CROs, Multimeter, Power supplies, LCR meter, Signal Generator and Power Analyzer.

Testing of various Devices: a) Semiconductor Devices: Single and Two junction Devices, Thyristor b) Electrical Devices: Transformers, relays, switches and fuses, cables and connectors, Batteries, Idea about ICs, PCBs, Sensors.

Unit II : Soldering and Power Sources **16 hours**

Basics of soldering: Soldering tools and materials (solder, flux), Types of soldering irons (Wattage, temperature, Tips), Soldering/ disordering station. Concept of ESD (Electrostatic discharge). The SMD (surface mounted Devices) and its soldering and de-soldering

Basics of SMPS (Switch Mode Power Supply), UPS (Uninterrupted power supply), batteries and Inverters along with their block diagram and Pin configuration of some important ICs used in it. Touch current and touch voltage.

Unit III : Appliance Testing and Computer Assembling **12 hours**

Testing of Induction cook Top, microwave, Solar panel; Installation and Requirements, stand alone and Grid connected PV system.
Basics of computer assembling and testing. Brief description about its specifications and costing Factors.

Unit IV : Reliability and Quality Standards **16 hours**
Concept of Reliability: Scope, objectives and factors influencing equipment effectiveness, Acceptance Testing, Type Testing , Safety Testing, Identification of legends, symbols, color codes, Safety, safety standards, safety certificates (CE, UL and VDE), General awareness of quality standards, quality management systems &documentation, Idea of ISO 17025, ISO 9001,Calibration and Uncertainty of measurements, Effect of environmental testing(refer to IEC60068-1 for guidance), Awareness on disposal of Electronic waste

Exercises

1. An overview of testing of basic electronic / electrical components (BNC cable, switches and fuses, Capacitors, Inductors, Transformers, Relays, diodes, transistor, Thyristor, IC, Potentiometer etc.); Design a curve tracer on CRO for component testing.
2. Control the intensity and color of bi-Color LED with the help of POT, SPDT switch and 9V battery.
3. Soldering and De-soldering processes; SMD
4. Safety testing of SMPS (Applicable Standard: IS 14886.
    a. Safety Testing (Earth Leakage current Test, Dielectric Test, Short Circuit Protection)
    b. Performance Testing (Line Regulation, Load Regulation for a variation of Load Min to Max load and vice versa, Efficiency at nominal input and rated load)
5. Tubular Batteries (Applicable standard: IS 1651) Test for Capacity, Test for voltage during discharge
6. Personal Computer (Applicable Standard: IS 14896)
    a. Safety Testing (Earth Leakage current Test, Dielectric Test) Performance Testing (Microprocessor used,
    b. RAM expansion Capacity, Clock Rate and RAM Capacity, Effect of Power Supply variations)
7. Invertor (Applicable Standard: IS 13314)
    a. Visual Inspection, High Voltage Test, Insulation Resistance Test, No –Load Test, Output Test

8. UPS (Applicable Standard: IEC 62040-3)
    a. Steady State Input Voltage Tolerance, Output-Normal Mode – No Load, Output-Normal Mode – Full Load, Output-Stored Energy Mode – No Load, Output- Stored Energy Mode – Full Load, Output-Normal Mode – Over Load, Output-Stored Energy Mode – Over Load Output-Normal Mode – Short Circuit, Output- Stored Energy Mode – Short Circuit, Efficiency and Input Power factor
9. Audio Amplifier (Applicable Standard: IEC 60065)
    a. Audio frequency response at various power levels, Response to various inputs sources like DVD player, IPOD, CD player, etc., audio output power, Power Consumption, Voltage range
10. Solar Panel system: Testing and Efficiency

Suggested Readings

- Nutan Kala Joshi and Swati Nagpal, Basic Electronics with Simulations and Experiments, Khanna Publishers (2021)
- Jesting Yong, Testing Electronic Components (2007)
- Mark de Vinck, Make Getting Started with Soldering; A Hands-on Guide to Making Electrical and Mechanical Connections, Maker Media (2017)
- Mike Judd and Keith Brindley, Soldering in Electronics Assembly, Second Edition, Elsevier (1999)
- Jestine Yong, Troubleshooting Repairing Switch Mode Power Supplies (1995)
- David Griffith, Uninterruptible Power Supplies, CRC Press (1989)
- Thomas Reddy, Lindens Handbook of Batteries, 4th Edition, McGraw Hill
- Kevin Wilson, Essentials Computer Hardware; The Illustrated Guide to Understanding Computer Hardware, Elluminet Press (2018)
- N.S. Reddy, PC Hardware Maintenance and Troubleshooting, NEO Publishing House (2016)
- Handbook of Induction Heating Second Edition Valery Rudnev, Don Loveless, Raymond L. Cook, CRC Press Taylor & Francis Group (2017)
- R. G. Gupta, Audio and Video systems, Tata McGraw Hill (2004)
- A.R. Jha, Solar Cell Technology and Applications, CRC Press (2009)
- Statistical Applications in Process Control (Quality and Reliability), J. Bert Keats, Douglas C. Montgomery, CRC Press (1996)
- Reliability and Quality Management , Ankitsandilya (Author), R.C.Mishra , New Age International Private Limited. (2009)
- E-Waste Management Challenges and Opportunities in India, Varsha Bhaga Ganguly, Routledge India (2021)

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Radiation Safety

Course Title and Code	Credits	Credit distribution of the course			Eligibility Criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical		
Radiation Safety	**2**	**1**	**0**	**1**	**Class XII pass with Physics and Mathematics as main subjects**	**NIL**

Learning Objectives
The Learning Objectives of this course are as follows:

- To focus on the applications of nuclear techniques and radiation protection.
- To not only enhance the skills towards the basic understanding of the radiation but also provide the knowledge about the protective measures against radiation exposure.
- To impart all the skills required by a radiation safety officer or any job dealing with radiation such as X-ray operators, jobs dealing with nuclear medicine: chemotherapists, operators of PET, MRI, CT scan, gamma camera etc.

Learning Outcomes:
After studying this course, the student will be able to:

- Understand and use the applications of nuclear techniques and radiation protection to guard against nuclear radiation hazards.
- Understand and use the units of radiations and their safety limits, the devices to detect and measure radiation.
- Understand and use radiation safety management, biological effects of ionizing radiation, operational limits and basics of radiation hazards evaluation and control, radiation protection standards,
- Use the devices which apply radiations in medical sciences, such as X - r a y, MRI, PET, CT-scan with the required safety measures.

SYLLABUS

THEORY COMPONENT

Unit 1: **6 hours**
Radiation and its interaction with matter: Basic idea of different types of radiation electromagnetic (X-ray, gamma rays, cosmic rays etc.), nuclear radiation and their origin.
Nuclear Radiation: Basic idea of Alpha, Beta, Gamma neutron radiation and their sources (sealed and unsealed sources).
Interaction of Charged Particles (including alpha particles): Heavy charged particles (e.g. accelerated ions) - Beth-Bloch Formula, Scaling laws, Mass Stopping Power, Range, Straggling.
Interaction of Beta Particles: Collision and Radiation loss (Bremsstrahlung).
Interaction of Photons: Linear and Mass Attenuation Coefficients.
Interaction of Neutrons: Collision, slowing down and Moderation.

Unit 2: **4 hours**

Radiation detection and monitoring devices: Basic concepts and working principle of gas detectors, Scintillation Detectors, Solid State Detectors and Neutron Detectors, Thermo- luminescent Dosimetry.

Radiation Quantities and Units: Basic idea of different units of activity, KERMA, exposure, absorbed dose, equivalent dose, effective dose, collective equivalent dose, annual limit of intake (ALI) and derived air concentration (DAC).

Unit 3: **2 hours**

Radiation Units, dosage and safety management: Basic idea of different units of activity, KERMA, exposure, absorbed dose, equivalent dose, effective dose, collective equivalent dose, annual limit of intake (ALI) and Derived air concentration (DAC).

Radiation safety management: Biological effects of ionizing radiation, Operational limits and basics of radiation hazards, its evaluation and control: radiation protection standards.

Unit 4: **3 hours**

Application of radiation as a technique: Application in medical science (e.g., basic principles of X-rays, MRI, PET, CT scan, Projection Imaging Gamma Camera, Radiation therapy), Archaeology, Art, Crime detection, Mining and oil. Industrial Uses: Tracing, Gauging, Material Modification, Sterilization, Food preservation.

PRACTICAL **30 hours**

Minimum five experiments need to be performed from the following, graphs to be plotted using any graphical plotting software

1) Estimate the energy loss of different projectiles/ions in Water and carbon, using SRIM/TRIM etc. simulation software, (different projectiles/ions to be used by different students).
2) Simulation study (using SRIM/TRIM or any other software) of radiation depth in materials (Carbon, Silver, Gold, Lead) using H as projectile/ion.
3) Comparison of interaction of projectiles with Z_P = 1 to 92 (where Z_P is atomic number of projectile/ion) in a given medium (Mylar, Carbon, Water) using simulation software (SRIM etc).
4) SRIM/TRIM based experiments to study ion-matter interaction of heavy projectiles on heavy atoms. The range of investigations will be Z_P = 6 to 92 on Z_A = 16 to 92 (where Z_P and Z_A are atomic numbers of projectile and atoms respectively). Draw and infer appropriate Bragg Curves.
5) Calculation of absorption/transmission of X-rays, γ-rays through Mylar, Be, C, Al, Fe and Z_A = 47 to 92 (where Z_A is atomic number of atoms to be investigated as targets) using XCOM, NIST (https://physics.nist.gov/PhysRefData/Xcom/html/xcom1.html).
6) Study the background radiation in different places and identify the source material from gamma ray energy spectrum. (Gamma ray energies are available in the website http://www.nndc.bnl.gov/nudat2/).
7) Study the background radiation levels using Radiation meter.
8) Study of characteristics of GM tube and determination of operating voltage and plateau length using background radiation as source (without commercial source).
9) Study of counting statistics using background radiation using GM counter.
10) Study of radiation in various materials (e.g. KSO_4 etc.). Investigation of possible radiation in different routine materials by operating GM counter at operating voltage.
11) Study of absorption of beta particles in Aluminum using GM counter.
12) Measurement of gamma ray attenuation co-efficient of aluminium using GM counter.
13) Estimation of half thickness for aluminium using GM Counter.

Essential Readings:

- Basic ideas and concepts in Nuclear Physics: An introductory approach by K Heyde, thirdedition, IOP Publication, 1999.
- Nuclear Physics by S N Ghoshal, First edition, S. Chand Publication, 2010.
- Nuclear Physics: Principles and Applications by J Lilley, Wiley Publication, 2006.
- Fundamental Physics of Radiology by W J Meredith and B Massey, John Wright and Sons,UK, 1989.
- An Introduction to Radiation Protection by A Martin and S A Harbisor , John Willey andSons, Inc. NewYork, 1981.

Suggestive Readings:

- Radiation detection and measurement by G F Knoll, 4th Edition, Wiley Publications, 2010.
- Techniques for Nuclear and Particle Physics experiments by W R Leo, Springer, 1994.
- Thermoluminescence dosimetry by A F Mcknlay, Bristol, Adam Hilger (Medical PhysicsHand book 5
- Medical Radiation Physics by W R Hendee, Year book Medical Publishers, Inc., London, 1981.
- Physics and Engineering of Radiation Detection by S N Ahmed, Academic Press Elsevier, 2007.
- IAEA Publications: (a) General safety requirements Part 1, No. GSR Part 1 (2010), Part 3 No.GSR Part 3 (Interium) (2010); (b) Safety Standards Series No. RS-G-1.5 (2002), Rs-G-1.9 (2005), Safety Series No. 120 (1996); (c) Safety Guide GS-G-2.1 (2007).

References (for Laboratory Work):

- Schaum's Outline of Modern Physics, McGraw-Hill, 1999.
- Schaum's Outline of College Physics, by E. Hecht, 11^{th} edition, McGraw Hill, 2009.
- Modern Physics by K Sivaprasath and R Murugeshan, S Chand Publication, 2010.
- AERB Safety Guide (Guide No. AERB/RF-RS/SG-1), Security of radioactive sources inradiation facilities, 2011
- AERB Safety Standard No. AERB/SS/3 (Rev. 1), Testing and Classification of sealedRadioactivity Sources., 2007.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Healthy and Sustainable Food Choices

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title& Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Healthy and Sustainable Food Choices	**2**	**0**	**0**	**2**	**Class XII**	**NIL**

Learning Objectives

The Learning Objectives of this course are as follows:

- To identify healthier food options
- To understand portion control for foods
- To demonstrate skill for preparing healthy and nutritious dishes
- To link sustainability with healthy food choices

Learning Outcomes

After studying this course, the student will be able to:

- Select and prepare healthier food options
- Relate the influence of food environment on food choices
- Comprehend the importance of sustainable food choices

SYLLABUS

Unit 1: Healthy food choices **12 hours**

Identification of healthy and unhealthy foods and Understanding the immediate food environment

- Food labels and basics of nutrient profiling models to classify foods as HFSS
- Nutrient profiling of commonly consumed food items
- Exploring the food environment by mapping the food outlets and food available near home andcollege

Unit 2: Food portion sizes and related factors **12 hours**

Understanding food portion sizes and its relation to nutrient density

- The concept of portion/serving sizes and portion control
- Estimation of energy and nutrient density of selected food products using nutrient composition database

Unit 3: Basics of food preparation **20 hours**

Planning and preparation of healthy and nutritious dishes

- Planning and preparation of the following:
  - Snacks
  - Soups and Salads
  - Desserts
  - Meal combinations

Unit 4: Sustainability and healthy food **16 hours**

Linking the concept of healthy eating with sustainability

- Identification of nutritious food sources which have minimal impact on the environment
- Case study on understanding food supply chain and carbon footprints of any commonly consumed foods

Essential/Recommended readings

- Chadha R and Mathur P (2015). Nutrition - A Lifecycle Approach. New Delhi: Orient Blackswan Pvt Ltd.
- Longvah T, Ananthan R, Bhaskarachary K and Venkaiah K (2017). Indian Food Composition Tables. National Institute of Nutrition, Indian Council of Medical Research, Department of Health Research, Ministry of Health and Family Welfare, Government of India, Hyderabad.
- Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). The Art and Science of Cooking: A Practical Manual, Revised Edition. New Delhi: Elite Publishing House Pvt Ltd.
- Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Hyderabad: Orient Black Swan.

Suggestive readings

- HLPE. 2017. Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome. https://www.fao.org/3/i7846e/i7846e.pdf
- Agarwal P and Mathur P (2021). Eat Right - A Food Systems Approach . New Delhi: Food Future Foundation
- NIN-ICMR. Food Based Dietary Guidelines for Indians

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:
Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

CHOCOLATE CRAFTS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisite of the Course (if any)
		Lecture	Tutorial	Practical/ Practice		
Chocolate Crafts	2	1	0	1	Class XII	NIL

LEARNING OBJECTIVES:

This Skill Enhancement Course enables student to understand the basic principles, hygiene and precautions of chocolate cookery. The emphasis of this will be to develop the skill required for preparation of various chocolates and its packaging and marketing.

The learning objectives of the course are:

- To learn the skill to craft different types of chocolates
- To learn the basic principles, hygiene and precautions of chocolate crafting and entrepreneurship in chocolate industry.

LEARNING OUTCOMES

After studying this course, the student will be able to:

- Have the understanding of different chocolates and acquire the skill to handle them.
- Develop the abilities and showcase skills for preparation of molded, center filled, free hand cluster, chocolate accessories, garnishes and ancillary chocolate recipes
- Get acquainted with techniques of packaging, costing and marketing of chocolates.
- Gain knowledge and skill to start small scale chocolate enterprise

SKILL DEVELOPMENT AND JOB OPPORTUNITIES':

Employment Opportunities:

- Apprentice in Small Catering units/ Kiosk/ Restaurant
- Entrepreneurship in chocolate industry
- Food Stylist / Designer

SYLLABUS

Credits: 2 **Total lectures (45): 45 Hours/ 15 weeks**
Theory: 30%, Credit – 1 (Lectures – 15)
Practical/ Field work/ Hands on learning: 70%, Credit – 1 (Lectures – 30)

THEORY

Unit 1: Introduction to Chocolates **(7 hours)**

Description: The focus of this unit is on chocolates, various aspects of chocolate processing and learning the precautions to make good chocolates.

Subtopics:

- Chocolates: history and types of compound and couverture chocolates.
- Processing of cocoa bean to manufacture chocolate liquor, cocoa butter, cocoa powder, chocolate and chocolate chips.
- Precautions and hygiene practices while handling chocolate.

Unit 2: Applications of Chocolates **(8 hours)**

Description: The focus of this unit is on using the chocolates to make different products, understanding and rectifying the faults.

Subtopics:

- Molded, center filled, free hand clusters, garnishes and accessories.
- Recipe development, costing and packaging of chocolates.
- Faults in chocolates like sugar bloom and fat bloom, their reasons and correction. temperature and moisture control while handling chocolate.

PRACTICALS

1. Introduction to different kinds of chocolates: Compound and Couverture; their sensory analysis and mouth feel. **(2 hours)**
2. Market survey of Indian and Internationally made chocolates with respect to label reading (ingredients). **(2 hours)**
3. Equipment's (molds, scrapers, piping bags, nozzles, cooking thermometers, microwave, double boiler) and precautions to be used in handling chocolate. **(2 hours)**
4. Making molded compound chocolate. **(2 hours)**
5. Variations of molded chocolates. **(2 hours)**
6. Making center filled chocolate. **(2 hours)**
7. Variations of center filled chocolate **(2 hours)**
8. Making free hand chocolate clusters. **(2 hours)**
9. Making chocolate accessories and garnish. **(4 hours)**
10. Ancillary chocolate recipes like chocolate sauce, ganache and hand **(2 hours)**

rolled truffles.

11. Tempering of couverture chocolate. **(2 hours)**
12. Packaging and labeling of chocolates. **(2 hours)**
13. Visit to chocolate factory or chocolate exhibition and sale trial. **(4 hours)**

ESSENTIAL READINGS

- Afoakwa E.O. (2013). Chocolate Science and Technology, Wiley India Pvt Ltd, 978-8126545735.
- Beckette S.T. (2018). The Science of Chocolate, Royal Society of Chemistry, 978-1788012355.
- Minifie B.W. (1999). Chocolate, Cocoa and Confectionary, Aspen Publication. 978-0834213012.
- Manay, S. & Shadaksharaswamy, M. (2020). Foods: Facts and Principles, New Age Publishers. 978-8122422153.
- Panda, H. (2012). Technology of Confectionery, Chocolates, Toffee, Candy, Chewing & Bubble Gums, Lollipop and Jelly Products with Formulations, Engineers India Research Institute publisher. 978-9380772165.

SUGGESTED READINGS:

- Hodge N. (2018). The Art and Craft of Chocolate, Quarry Books, 978-1631594663.
- Perry S. (2008). Deep Dark Chocolate, Chronicle Books. 978-0811860895.
- Panda, H. (2017). Start Your Own Confectionery and Chocolate Products with Manufacturing and Formulations Hand Book, Bio-Green Books publisher. 978-9380772844.
- Greweling, P.P. (2012). Chocolates and Confections: Formula, Theory, and Technique for the Artisan Confectioner, The Culinary Institute of America (CIA), Wiley; 2nd edition, 978-0470424414.
- Shaffer, K. (2019). Chocolate for Beginners: Techniques and Recipes for Making Chocolate Candy, Confections, Cakes and More, Rockridge Press Publishers, 978-1641528887.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

PASTA AND PATISSERIE TECHNOLOGY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisite of the Course (if any)
		Lecture	Tutorial	Practical/ Practice		
Pasta And Patisserie Technology	**2**	**1**	**0**	**1**	**Class XII**	**NIL**

Learning Objectives

This Skill Enhancement Course is about developing an understanding and skill about the types, role of ingredients, processing/production, innovations, sensory attributes and quality assessment of Pasta and Patisserie. The student can also study SEC on Bakery Enterprise, Food Business and Cafeteria Management to enhance scope of work opportunities.

The learning objectives of the course are:

- To provide students with basic knowledge of pasta technology.
- To familiarize students with patisserie technology/ skill.

Learning Outcomes

After studying this course, the student will be able to:

- Develop understanding of the pasta and patisserie technology.
- Acquire skill to prepare different pasta and patisserie.
- Work in specialized pasta and patisserie outlets such as restaurants, food courts, kiosks, fast food centers as well as in large institutions such as hotels, hospitals and food processing units.

SKILL DEVELOPMENT AND JOB OPPORTUNITIES':

Employment Opportunities:

- Apprentice in Small Catering units/ Kiosk/ Restaurant
- Entrepreneurship in pasta and patisserie technology
- Food Stylist / Designer for pasta and patisserie

SYLLABUS

Credits: 2 **Total lectures (45): 45 Hours/ 15 weeks**
Theory: 30%, Credit – 1 (Lectures – 15)
Practical/Field work/Hands on learning: 70%, Credit – 1 (Lectures – 30)

THEORY

Unit 1: Introduction to Pasta **(7 hours)**

Description: This unit will include history of pasta , types of pasta, pasta making tools and equipment and understanding different sauces for preparing pasta dishes

Subtopics:

- History and types of pasta: packaged and handmade.
- Types: names and shapes of pasta.
- Tools and equipment commonly used for manufacturing pasta and preparing pasta dishes.
- Different types of sauces used for preparing pasta dishes: Tomato sauce, Béchamel, Bolognese, pesto and aglio olio.

Unit 2: Introduction to Patisserie **(8 hours)**

Description: This unit is about different types of Patisserie like short crust pastry, choux pastry, puff pastry, sponge cake, shortened travel cakes, cheese cakes, cookies, brownies and biscotti.

Subtopics:

- Short crust Pastry: Tarts and Pies
- Choux Pastry: Eclairs, Profiteroles.
- Puff Pastry: Patties, French Hearts, Vol au vents.
- Sponge cake and its decoration techniques.
- Shortened travel cakes and its variations.
- Cheesecakes with different toppings.
- Cookies, Brownies and Biscotti.

PRACTICALS **30 hours**

1. Market survey of Packaged Pasta and patisserie. **(2 hours)**
2. Orientation and handling of the tools and equipment used in Pasta making (mechanical pasta roller and cutter, rolling pins, serrated knives, ravioli cutters, drying rack and drying trays, stock pots, pans). **(2 hours)**
3. Making the Pasta dough, shaping Pasta (Fettuccine, Farfalle, Macaroni, Noodles, Spaghetti, Vermicelli), drying and storage. **(4 hours)**
4. Making Stuffed Pasta: Ravioli with fillings like spinach and Ricotta Cheese; herbed cream cheese. **(2 hours)**
5. Making Sauces: Tomato, Bechamel, Pesto and preparing Pasta dishes with them. **(2 hours)**

6. Making Baked Pasta: Mac n cheese and Lasagna. **(2 hours)**
7. Preparation of short crust pastry: Tarts or Pies **(2 hours)**
8. Preparation of Choux pastry: Eclairs or Profiteroles. **(2 hours)**
9. Preparation of Puff pastry: Patties/ Vol au vents/ French Hearts **(4 hours)**
10. Preparation of cakes (sponge cake/shortened cake) and their variations/decoration with whipped cream frosting. **(4 hours)**
11. Preparation of Cheesecake with fruit compote topping. **(2 hours)**
12. Preparations of Brownies or biscotti **(2 hours)**

ESSENTIAL READINGS:

- Karr, N. (2016).Handmade Pasta Workshop & Cookbook: Recipes, Tips & Tricks for Making Pasta by Hand, with Perfectly Paired Sauces. US : Page Street Publishing .https://amzn.eu/d/6skTmuM(ISBN 10-1624143229, ISBN 13-978-1624143229)
- Donnelly,K. (2021). The Artisan Pasta Cookbook: The Step by Step Guide with Flavorful Recipes for Mastering Handmade Pasta, Noodles, Gnocchi and Risotto at Home.Oksana Alieksandrova . https://amzn.eu/d/dFir9Zx(ISBN 10-195460503X , 13-978-1954605039)
- Juillet, C. (1998). Classic Patisserie: An A-Z handbook. CBS publishers and distributors pvt. Ltd.https://amzn.eu/d/5RC7hja(ISBN 10-075063815X, ISBN 13-978-0750638159)
- Rippington, N. Baker, C. Burke, M (2013). Professional Patisserie: For Levels 2, 3 and Professional Chefs. Hodder Education; UK https://amzn.eu/d/352HVZy

  (ISBN-10: 1444196448, ISBN-13: 978-1444196443)

SUGGESTED READINGS:

- Dubey, S. C. (2016). Basic Baking - Science and Craft. Delhi: Society of Indian Bakers.
- Dubey, S. C. (2009). Bakery Vigyan. Delhi: Society of Indian Bakers
- Ketrapaul, N., Grewal, R.B., & Jood, S. (2005). Bakery Science and Cereal Technology. Delhi: Daya Publishing House.
- Edward, W. P. (2007). The Science of Bakery Products. Cambridge: RSC Publishing.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

FROZEN DESSERT TECHNOLOGY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisite of the Course (if any)
		Lecture	Tutorial	Practical/ Practice		
Frozen Dessert Technology	**2**	**1**	**0**	**1**	**Class XII**	**NIL**

LEARNING OBJECTIVES

This course will help learners be equipped with the skills of developing, packaging, innovating and marketing of frozen desserts like ice creams, sorbets, ice popsicles, yoghurts, traditional *kulfi*, etc. During the past decade, the frozen food industry has grown, with an array of innovations in ice-creams, frozen yogurt, gelato and traditional desserts such as *shrikhand*. There is vast scope for the development of lower-fat, reduced-sugar products which may lead to increased sales. This course will equip the students with knowledge and skills necessary to work in the frozen food industry.

The learning objectives of the course are:

- To learn basic concepts on processing, distribution and storage of frozen desserts
- To develop the skill of preparing various types of frozen desserts

LEARNING OUTCOMES

After studying this course, the student will be able to:

- Prepare/ process/pack/handle/sell different types of frozen desserts
- Work in frozen food industry or start own business – manufacturing, distribution and retail.

SKILL DEVELOPMENT AND JOB OPPORTUNITIES':

Employment Opportunities:

- Apprentice, supervisor, processor in frozen food manufacturing units/ distribution and retail outlets
- Entrepreneurship in frozen food industry
- Food Stylist / Designer for frozen desserts

SYLLABUS

Credits: 2 **Total lectures (45): 45 Hours/ 15 weeks**
Theory: 30%, Credit – 1 (Lectures – 15)
Practical/Field work/Hands on learning: 70%, Credit – 1 (Lectures – 30)

THEORY

Unit 1: Food Freezing **(7 hours)**

Description: This unit will give an introduction to the concept of frozen foods/industry, their properties. It will also include the various equipments, freezing systems/methods which can be used to process, store and maintain cold chain during distribution.

Subtopics:

- Background, description and properties of frozen foods
- Freezing time
- Equipment and Freezing systems (direct and indirect contact)
- Act, regulations and standards

Unit 2: Frozen Desserts **(8 hours)**

Description: This unit will focus on salient types of frozen desserts; both milk based as well as water based. It will include the composition, physical properties, processing, storage, freezing, common defects, packaging.

Subtopics:

Subtopics:

- Definitions and important terminology
- Ice-cream – composition, physical properties, processing, storage, freezing, common defects, packaging
- Ice based sherbets, sorbets, ice candies, popsicles
- Other frozen desserts – frozen yogurt, *shrikhnad*, mellorine, parevine, ice-cream sandwiches
- Future trends (novelties)

PRACTICALS

1. Market survey of frozen desserts and accessories and basics of working in food lab. **(2 hours)**
2. Preparation, packaging, labeling and sensory evaluation of vanilla ice cream **(4 hours)**
3. Preparation, packaging, labeling and sensory evaluation of any fruit based ice cream (mango, strawberry, pineapple etc.) **(4 hours)**
4. Preparation, packaging, labeling and sensory evaluation of Kulfi or nuts and fruit ice cream **(4 hours)**
5. Preparation, packaging, labeling and sensory evaluation of ice cream with egg or gelato or frozen custard **(4 hours)**
6. Preparation, packaging, labeling and sensory evaluation of ice cream sandwich or novelties **(4 hours)**
7. Preparation, packaging, labeling and sensory evaluation of ice-lolly/ popsicles/ ice-candies **(4 hours)**
8. Preparation, packaging, labeling and sensory evaluation of *Shrikhand* or frozen yogurt **(4 hours)**

ESSENTIAL READINGS

- Raina, U., Kashyap, S., Narula,V., Thomas, S., Suvira, Vir, S., & Chopra, S. (2005). Basic Food Preparation – A Complete Manual. Delhi:OrientLongman.
- Khanna, K., Gupta, S., Seth, R., Mahana, R., & Rekhi, T. (2004). The Art and Science of Cooking. Delhi: Phoenix Publishing House Private Limited.
- Migoya, MJ. (2008). Frozen Desserts. First Edition. John Wiley and SonsInc.
- Food Safety and Standards Authority of India (FSSAI). (2011). Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011. Compendium on Food Additives Regulations. Elite Publishers. Pgs. 877.
- Food Safety and Standards Authority of India (FSSAI). (2019). FSSAI regulations on frozen desserts.

Website: https://www.fssai.gov.in/upload/media/FSSAI_News_Ice_FNB_22_05_2019.pdf.

SUGGESTED READINGS:

- Clarke, C. (2004). The Science of Ice Cream. The Royal Society of Chemists.
- De, S. (2001). Outlines of Dairy Technology. First Edition. Oxford Publishing House.
- Francis, F.J. (2010). Encyclopedia of Food Science and Technology. Volume 2. SecondEdition. John Wiley & Sons.
- Goff, H.D. & Hartel, R.W. (2008). Ice Cream. Seventh Edition. Springer.
- Himadari, P. (2010). Handbook on Frozen Food Processing and Freeze Drying Technology.First Edition. Engineers India Research Institute.
- Jana, A., Pinto, S. & Moorthy, P.R.S. (2016). Ice Cream and Frozen Desserts.AgriMoon.com Publishing. Website: https://www.agrimoon.com/wp- content/uploads/Ice-cream-Frozen-Dessrt.pdf.
- Rorer, S.T. (2005). Ice Creams, Water Ices, Frozen Puddings Together with Refreshmentsfor All Social Affairs. First Edition. Project Gutenberg. Website: https://www.gutenberg.org/ebooks/8501.
- Stogo, M. (2018). Ice Cream and Frozen Desserts: A Commercial Guide to Productionand Marketing. John Wiley & Sons.
- Tharp, B.W. & Young, L.S. (2012). Tharp and Young on Ice Cream: An EncyclopedicGuide to Ice Cream Science and Technology. First Edition. DEStech Publications Inc.
- Weinstein, B. (2010). The Ultimate Ice Cream Book. First Edition. Perfect Bound Publishing House. Website: https://www.pdfdrive.com/the-ultimate-ice-cream-book-over-500-ice-creams-sorbets-granitas-drinks-and-more-e184459836.html.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Early Child Care and Education Settings

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisiteof the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Early Child Care and Education Settings	**2**	**0**	**0**	**2**	**Class XII**	**NIL**

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the significance of early childhood years and the importance of ECCE
- To understand developmental milestones and delays in development
- To plan, organize and create care facilities and developmentally appropriate material for infants and young children.
- To be acquainted with the ECCE centre, its daily routine, requirements, functioning and evaluation of the programme.
- To trace the progression of children in early childhood setting

Learning outcomes

After studying this course, the student will be able to:

- Explain the significance of early childhood development andECCE
- Become familiar with developmental milestones and learn to assesschildren in early years.
- Understand, plan and organize care activities for youngchildren
- Prepare activities and aids for fostering development in theearly years
- Learn about evaluation of an ECCE programme

SYLLABUS

Unit 1: Importance of early years and significance of ECCE **20 hours**

The unit will help to develop an understanding on the concept and importance of ECCE

- Meaning and objectives of ECCE and importance of early years

- Norms and developmental milestones of infants and young children
- Observations, developmental checklists and developmental delays
- Nurturing care framework and early childcare practices
- Review of existing ECCE programmes and policies in India

Unit 2: Developmentally appropriate activities for young children 20 hours

The unit will focus on ways to promote development during early years through play and exploratory activities.

- Care and stimulation activities for infants and young children
- Plan and prepare multi-sensory materials and activities to promote development across domains: Physical motor, socio-emotional, cognitive and language development
- Use of music, dance, drama, storytelling, puppetry, rhymes/poems and art and craft
- Importance of- Indoor and outdoor activities; individual and group activities; free play and guided play; circle time
- Activities for school readiness

Unit 3: Components of ECCE Programme 20 hours

The unit will focus on the understanding of infrastructure, materials and equipment, curriculum development and assessing the development of children.

- Daily routines in child care and preschool centres
- Creating safe spaces for children: Organizing indoor and outdoor material and equipment
- Understanding the ECCE curriculum: Developing daily, weekly and monthly plans
- Assessing children's development across domains
- Indicators of a quality ECCE centre

Essential/Recommended Readings

- ECCE National Curriculum Framework- https://wcd.nic.in/sites/default/files/national_ecce_curr_framework_final_03022014%20%282%29.pdf
- Managing Children's Programmes: Some Perspectives. Indira Gandhi National Open University DECE Study Material. http://www.ignouhelp.in/ignou-dece-study-material/
- Morrison, G. S. (2018). Early Childhood Education Today. Pearson
- National Education Policy 2020- education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
- Organizing a Child Care Centre. Indira Gandhi National Open University DECE Study Material
- Soni, R. (2015). Theme Based Early Childhood Care and Education Programme: A Resource Book. National Council of Educational Research and Training.
- Swaminathan, M. (1998). The First Five Years. Sage Publications

Suggestive Readings

- Aggarwal, J. C. (2007). Early Childhood Care and Education: Principles and Practices.

Shipra: New Delhi.

- Arni, K. and Wolf G. (1999). Child Art with Everyday Materials. TARA Publishing.
- Mohanty, J. Mohanty, B. (1996). Early childhood care and Education. Deep and Deep Publication, New Delhi.
- Morrison, G. S. (2003). Fundamentals of early childhood education. Merrill/Prentice Hall:
- Play Activities for Preschoolers – 1 and 2. Indira Gandhi National Open University DECE Study Material
- Virginia Singh, A. (1995). Playing to Learn: A training manual for Early Childhood Education. M. S. Swaminathan Research Foundation.

Note: Learners are advised to use the latest edition of readings

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Image Styling

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Image Styling	2	0	0	2	Class XII	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- To strengthen the student's hands on experience in using different tools of improving the visual and non-visual appearance
- To train the students with technical and professional ways of understanding wardrobe needs and their development
- To develop skills in understanding fashion trends for planning personal shopping .

Learning Outcomes

After studying this course the student will be able to:

- Demonstrate the practical ways to strengthen physical image based on body type, face shape and personal style analysis.
- Understand the effect of elements and principles of design on visual appearance.
- Explain the fashion trends of apparel and accessories.
- Identify wardrobe elements and the processes of planning and organization.
- Plan personal shopping of apparel and accessories based on physical traits, personal style and budget.

SYLLABUS
Practical

Unit 1: Physical traits and analysis **16 hours**

Learning the first step in styling by developing skills to analyze individual characteristics such as body type, proportions, face shapes etc.

Subtopics:

- Body types
- Body proportion
- Face shapes
- Personal colour analysis

Unit 2: **Application of elements and principles of design for image styling** **16 hours**

Understanding the basics of design by learning about the various elements and principles of design, their role in the success of a design, and their importance in personal styling.
Subtopics:

- Effects of design elements and principles on clothing and visual appearance
- Effect of garment components on visual appearance

Unit 3: Wardrobe planning **12 hours**

Learning the skills of wardrobe planning, analysis and management as per apparel and accessory needs.
Subtopics:

- Wardrobe analysis
- Wardrobe essentials
- Organization and categorization of wardrobe
- Elements of a basic wardrobe
- Optimising wardrobe and budgeting

Unit 4: The business of styling **16 hours**

Understand the working of styling business. Developing the art of styling. Analyzing the present market trends.

Subtopics:

- Dress vs Style
- Analysis of trends of apparels and accessories
- Survey of apparel and accessory stores/ brands with respect to style, size and price.
- Types of stylists: Freelance stylists, Celebrity stylists, Editorial stylists
- Marketing your business
- Forms and Contracts

Essential Readings

- Constantine, S. & Woodall, T. *The Body Shape Bible: Forget Your Size Discover Your Shape Transform Yourself*, published by Weidenfeld & Nicolson (1877), ASIN: B01K14NWB8
- Funder, D.C. 2001, The Personality *Puzzle (2nd ed)*, New York: W.W. Norton
- Phares, J.E. 1991, *Introduction to Personality (3rd ed)*, New York: Harper Collins
- Rasband, J. *Wardrobe Strategies for Women*, published by Fairchild Books; Student edition (September 18, 2001), ISBN-10: 1563672596

Suggested Readings

- Baumgartner, J. *You are What You Wear*, Da Capo Press (2012)
- Mc Call, *Sewing in Color*, Hamlyn Publishing Group 11th edition (1975)
- Romano, C. *Plan your Wardrobe,* New Holland Publishers (1998)

  Vega, L. *The Image of Success,* American Management Association (2010)

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Content Development and Media for Children

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Content development and Media for Children	**2**	**0**	0	**2**	**Class XII**	**NIL**

Learning Objectives

The Learning Objectives of this course are as follows:

- To explore and review current trends in media and content for children
- To plan developmentally appropriate media and content for children
- To create culturally appropriate content for learning

Learning Outcomes

After studying this course, the student will be able to:

- Identify forms of content and media available for children
- Understand the impact of content and media on thoughts, attitudes and values of children
- Create age-appropriate content and media for children

SYLLABUS

Unit 1: Content for children: Relationship and interaction **20 hours**

This unit will cover the different forms of content available to children and will create a linkage between children, content and context

- Exploring different forms of content for children (exposure to history and folk forms)
- Children's usage and significance of print, audio visual content
- Review and analysis of available content for children
- Enabling parents/caregivers to be able to use content appropriately with children

Unit 2: Media for Children **20 hours**

This unit will discuss the different forms of media available to children in the contemporary context and also focus on advances in media technology

- Different media forms available for children

- Children's use and significance of media forms
- Assessing the portrayal of children in media; assessing the quality of Print, App or TV program, website, film
- Media literacy for children, parents and caregivers

Unit 3: Developing content and media for children **20 hours**

This unit will enable students in developing content and media for children.

- Scripting for children: content and structure; Literature for and by children; Writing stories/poems for children (significance of humour, wonder, logic)
- Music/ Dance/Theatre/puppetry as sources for content development and dissemination
- Creating age-appropriate content for:
  - Developmental and domain specific needs
  - Children activity box/ Preschool Kit
  - Interactive Mobile applications/Digital content

Essential readings

- Condry, J. (1989). *The Psychology of Television.* Lawrence Erlbaum, Associates, Inc.
- Daniel,A.K. (2012). *Storytelling across the Primary Curriculum.* London: Routledge.
- Engel, S. (1999). *The Stories Children Tell: Making Sense of the Narratives of Childhood.* USA: W.H.. Freeman and Company.
- Honig, A. (1983). *Television and young children*. Young children 38(4).
- Joshi, P. & Shukla, S. (2019). *Child development and education in the twenty-first century.* Singapore: Springer International.
- Livingstone, S. (2002). *Young People and New Media.* New Delhi: Sage
- Prakash, S. &Mathur, P. (2000). *Children and TV.* NCERT,
- Real, M. R. (1996). *Exploring Media Culture.* New Delhi: Sage
- Singer D.G. & Jerome L. (2012). *Handbook of Children and Media.* California: Sage.

Suggestive Readings:

- Calvert, S.L. & Wilson, B.J. (2008). *The Handbook of Children, media and Development.* United Kingdom: Blackwell Publishing.
- Jordan, A.B. & Romer, D. (2014). *Media and the Well-Being of Children andAdolescents.* New York: Oxford University Press.

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Small Scale Catering

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title& Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Small Scale Catering	2	0	0	2	Class XII	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- To comprehend fundamentals of menu planning through management of resources in a food service establishment.
- To develop insight for recipe standardization and to apply acquired skills in menu planning and quantity food production.
- To use knowledge of preliminary steps for starting a small-scale catering unit.

Learning Outcomes

After studying this course, the student will be able to:

- Comprehend fundamentals of menu planning throughmanagement of resources in a food service establishment.
- Develop insight for recipe standardization.
- Apply acquired skills in menu planning and quantity foodproduction
- Use the knowledge of preliminary steps for starting a small-scalecatering unit.

SYLLABUS

Unit 1: Introduction to Food Service **12 hours**

Kinds of food service establishments, kinds of food service outlets

- Market survey of various food products raw and processed in different kinds of markets.
- Survey of a nearby small-scale catering unit

Unit 2: Food Production **32 hours**

- Menu planning: Importance of menu, factors affecting menu planning, types of menus, menu planning for different kinds of food service units, features of good menu card
- Basics of food purchase, receiving and storage
- Quantity food production: standardization of recipes, quantity food preparation techniques, recipe adjustments and portion control
- Hygiene and Sanitation

□ Planning menus within specified budget for the following:

- Menu for a birthday party/ nursery school.
- Packed tiffin lunch for MNC employees.
- Cyclic menu for catering breakfast, lunch and dinner for PG/ hostel girls.

□ Evaluation of menu card
□ Visit to a small-scale catering unit
□ Use of computers in inventory and billing
□ Standardization of a recipe
□ Scaling up of recipe for large number of customers (75)
□ Food stall/ event catering
□ Demonstration of specific dishes for entrepreneurial set up
□ Use of checklist to assess implementation of good hygiene and sanitation practices in a small-scale catering unit

Unit 3: Planning of a Food Service Unit **16 hours**

- Preliminary planning: survey of types of units, identifying clientele, menu, operations and delivery
- Planning the set up:
- Identifying resources (money, manpower, time, facilities, equipment, utilities, types of kitchen areas, flow of work and work area relationship), types of services and delivery system, business registration
- Basics of Finance (Components of cost and factors affecting them, determining the selling price)

- Market survey/visit for equipment
- Development of a business plan

Essential/Recommended Readings

- Desai V. (2011) The Dynamics of Entrepreneurial Development and Management, Himalaya Publishing House Pvt. Ltd., Mumbai.
- Mohini, S. (2005) Institution Food Management New Age International Publishers.
- West, B.B.& Wood, L. (1988) Food Service in Institutions 6th Edition Revised By Hargar FV, Shuggart SG, &Palgne Palacio June, Macmillan Publishing Company New York.

Suggested Readings

- Knight, J.B. & Kotschevar, L.H. (2000) Quantity Food Production Planning & Management 3rd edition John Wiley & Sons.
- Payne-Palacio, J. & Theis, M. (2011) Foodservice Management: Principles and Practice 12th edition.

- Taneja, S. & Gupta, S. L. Entrepreneur Development- New Venture Creation. Galgotia Publishing Company

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

CULINARY SCIENCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisite of the Course (if any)
		Lecture	Tutorial	Practical/ Practice		
Culinary Science	2	1	0	1	Class XII	NIL

Learning Objectives:

Culinary science skill paper is about the cuisine arts of food preparation, cooking, and presentation of food. Students will be equipped with knowledge of various tools and equipments used for cooking, different cooking techniques, working in establishments such as restaurants and relatively large institutions such as hotels and hospitals, standardized cooking practices and recipes.

The learning objectives of the course are:

- To develop cuisine arts of food preparation, cooking, and presentation of food.
- The practical exercises aim to provide hands-on training to develop the skill of various cooking techniques and knowledge about various tools and equipment used for cooking

Learning Outcomes

After studying this course, the student will be able to:

- Develop different cooking and presentation skills.
- Get hands-on training to develop the skill to prepare Indian traditional and nutritious recipes.
- Develop the ability to work in establishments such as restaurants, food courts, kiosks, fast food centers large institutions such as hotels and hospitals.

SKILL DEVELOPMENT AND JOB OPPORTUNITIES':

Employment Opportunities:

- Apprentice in Small Catering units/ Kiosk/ Restaurant
- Food Supplier
- Food Storekeeper
- Food Stylist / Designer

SYLLABUS

Credits: 2 **Total lectures (45): 45 Hours/ 15 weeks**
Theory: 30%, Credit – 1 (Lectures – 15)
Practical/ Field work/ Hands on learning: 70%, Credit – 1 (Lectures – 30)

Unit 1: Basic Culinary Concepts **(8 hours)**

Description: This unit is an introductory unit about the culinary science and basic food ingredients, importance of hygiene to serve safe food.

Subtopics:

- Culinary Terms
- Basic Safety and Hygiene
- Basic food ingredients
- Recipe Evaluation: Sensory evaluation scales

Unit 2: Kitchen Techniques and Technology **(7 hours)**

Description: This unit is about methods of cooking, storage and organizing the storage and imparting knowledge about various kitchen equipment and accessories.

Subtopics:

- Methods: Moist heat, Dry heat, Frying, Microwave Cooking
- Basic Equipment: Gas stove/Cooking range, Refrigerator, Oven, Microwave, Electrical Blenders, Air Fryer
- Kitchen Aids: Cooking Equipment, Measuring Equipment, Baking Equipment, Assorted Knives, Assorted tools, Service Equipment.
- Storage and organization of work area

PRACTICALS **30 hours**

1. General Instructions: Working in Food Lab/ Kitchen, Weight of edible portion, Temperature, Abbreviations used in recipes **(2 hours)**
2. Basic Indian Gravies: White, Makhani, Salan, Red gravies, Kadi **(2 hours)**
3. Beverages: Tea, Coffee, Cold Coffee, Smoothies, Milk Shakes, Fruit Punch, Iced Tea, Panna, Mojito. **(2 hours)**
4. Indian Breads: Chapatti, Paratha, Naan, Kulcha, Bhatura, Bedmi Puri, Sandwich (open, grilled, rolled), Puranpoli, Kathi roll. **(2 hours)**
5. Indian Rice Cooking: Boiled, Curd, Tomato, Lemon, Fried, Pulao, Tamarind, Biryani, Poha **(2 hours)**
6. Soups: Stock, Clear soups, Cream soups **(2 hours)**
7. Salads and Salad cuts/ craft: Coleslaw, Quinoa salad, Corn &Walnut, Exotic seeds salad, Salad vegetable cuts and crafts **(2 hours)**
8. Vegetables Preparations: Dry veg, Koftas, Stuffed veg, Baked veg preparations. **(2 hours)**
9. Indian Dry Snacks with Dips: Dhokla, Idli, Uttapam, Kachori, Khandvi, Chilla, Dumplings, (Momos/Dim sums/ wontons) **(4 hours)**
10. Indian Savory Snacks: Assorted Pakoras, Dahi Bhalla, Cutlets, Samosa, Tikki, Paneer Tikka **(4 hours)**
11. Traditional Deserts 1: Halwa, Kulfi, Kheer, Gulab Jamun **(2 hours)**
12. Traditional Deserts 2: Rasmali, Ladoo, Burfi, Jalebi, Gujia, Rasgulla **(2 hours)**
13. Baking: Tea cake, Muffins **(2 hours)**

ESSENTIAL READINGS

- Raina, U., Kashyap, S., Narula,V., Thomas, S., Suvira, Vir, S., & Chopra, S. (2005).Basic Food Preparation – A Complete Manual. Delhi: Orient Longman.
- Khanna, K., Gupta, S., Seth, R., Mahana, R., & Rekhi, T. (2004). The Art and Science ofCooking. Delhi: Phoenix Publishing House Private Limited.
- Arora, K. (2011). New Delhi: Theory of Cooking. Frank Bros & Co.

SUGGESTED READINGS:

- Kumar, B. (2021). Theory of Culinary Arts. Rudra Publications
- Sethi, P. & Lakra, P. (2015). Aahar Vigyan, Poshan Evam Suraksha. Delhi: ElitePublishing House Pvt. Ltd.
- Suri, S. & Malhotra, A. (2014). Food Science Nutrition and Safety. Delhi: Pearson IndiaLtd.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

DAIRY PROCESSING

Credit Distribution, Eligibility and Pre-Requisites of The Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (If any)
		Lecture	Tutorial	Practical/ Practice		
Dairy Processing	**2**	**0**	**0**	**2**	**XII (PCM/PCB)**	**NIL**

Learning Objectives

The Learning Objectives of this course are as follows:

- To study the processing of milk products

Learning Outcomes

After studying this course, the student will be able to:

- Gain skills in dairy product development and hands-on training forthe processing of different milk products.
- Establish a food industry/start up based on their learnings in thesubject.
- Start providing 3rd party manufacturing to premier dairy-based industries.
- Work in any dairy based industry.

Syllabus

Practical Exercises: **60 hours**

The learners are required to perform the following:

- Processing of Flavoured milk
- Preparation of Dahi
- Preparation of Ghee
- Preparation of milk based traditional Indian sweet
- Preparation of Ice cream
- Preparation of milk based instant mix
- Preparation of whey based drink
- Milk based new product development
- How to plan a startup, budgeting, marketing / case study/ entrepreneur (anyone of the above)
- Regulations, Licensing and registration of a startup

Essential/recommended readings

- De, Sukumar. (2007). Outlines of dairy technology. Oxford University Press.
- Webb B.H. & Alford (2005). Fundamentals of dairy chemistry. CBS Publisher
- P.F. Fox, T. Uniacke-Lowe and J.A.O' Mahony (2005). Dairy Science and Technology. Taylor & Francis.
- P. Walstra, Jan T.M. Wouters and Tom J. Geurts (2015). Dairy chemistry and Biochemistry. Springer

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Skill progression

India is indisputably the largest milk producer in the world. Overall, dairy industry in India engages about 80 million households in rural area. The course 'Skills in Dairy Processing' provides valuable skills to the candidates required to be in a dairy industry. The course is planned to provide a hands-on training experience to the students in relevance to the dairy product preparation and setting up an enterprise. The other courses like Technology of Milk and milk products, Food Quality Management, Agri-business management, Sensory science, Food standards and regulations in the upcoming semesters will provide a deeper insight to thesubject and will help students to improve their skill set.

FRUITS & VEGETABLE PROCESSING

Credit Distribution, Eligibility and Pre-Requisites of The Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (If any)
		Lecture	Tutorial	Practical/ Practice		
Fruits and Vegetable Processing	2	0	0	2	XII (PCM/PCB)	NIL

Learning Objectives

- To provide hands-on training to students for the entire process of selection, preparation, packaging, & presentation of variety of fruits & vegetable products.
- To impart skills of scale-up production of fruits & vegetable products & by products for setting their own enterprise.

Learning Outcomes

After studying this course, the student will be able to:

- Create variety of value-added products of consumer's choice & need.
- Enhance the level of processing, level of valueaddition, share in global food trade & employability.

Skill Development and Job Opportunities: Justification

The food processing sector is one of the largest sectors in India in terms of production, growth, consumption, and export. however, there exists a definite lack in processing and storage infrastructure and skilled manpower, which are essential to reducing the waste and enhancingthe value addition and shelf life of the farm products. The government has ambitious plans to increase the level of processing, value addition and share in global food trade. This will have a spike in the requirement for qualified and trained fruits & vegetable processing professionals. The main objective of having this paper is to impart knowledge of processing various value addedfruits & vegetable products which is ultimately used to enhance the employability of anycandidatestudying the paper including food technology graduates.

Syllabus

Practical **60 hours**

Practicals based on different processing/ preservation techniques.

1. Preparation of canned fruits /vegetables
2. Preparation of chips from potato/bittergourd/apples etc.
3. In bottle pasteurization of fruit juices, nectars, purees etc.
4. Preparation of fruit squashes

5. Preparation of fruit cordials
6. Preparation of fruit jams/jellies
7. Preparation of fruit nectars
8. Preparation of mango/chilli/ lime pickle
9. Preparation of Tomato puree & product
10. How to plan a startup, budgeting, marketing / case study/ entrepreneur (anyone ofthe above)
11. To study the Regulation, Licensing & registration of particular

Essential Readings

- Girdharilal., Siddappaa, G.S and Tandon, G.L.(2009). Preservation of fruits & vegetables. ICAR, New Delhi.
- Thompson, A.K., (2003). Fruits and vegetables; Harvesting, handling and storage. Blackwell Publishing.

Suggested Readings:

- Crusess, W.B. (2004). Commercial Unit and Vegetable Products. W.V. SpecialIndian Edition. Agrobios India.
- Manay, S. and Shadaksharaswami, M. (2004). Foods: Facts and Principles. New Age Publishers.
- Ranganna S.(2007). Handbook of analysis and quality control for fruits and vegetable products. Tata Mc Graw-Hill publishing company limited, Second edition.
- Srivastava, R.P. and Kumar, S. (2006). Fruits and Vegetables Preservation-Principles and Practices. 3rd Ed. International Book Distributing Co.
- Somogyi, L.P., Ramaswamy, H.S. and Hui, Y.H. (1996). Biology, Principles and Applications. Volume 1. Technomic Publishing Company, Inc.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

MINIMAL FOOD PROCESSING

Credit Distribution, Eligibility and Pre-Requisites of The Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (If any)
		Lecture	Tutorial	Practical/ Practice		
Minimal Food Processing	**2**	**1**	**0**	**1**	XII (PCM/PCB)	NIL

Learning Objectives

- To provide the best combination of health, nutrition and convenience based on minimal food processing
- To impart skills in food processing for extending the shelf life with minimal processing that results in minimum changes to sensory characteristics and nutritional qualities, yet imparting convenience to the consumer.
- To make students aware of the various novel technologies being developed and used for minimal processing across the world.

Learning Outcomes

After studying this course, the student will be able to:

- Have skills and knowledge of methods of preservation by minimal processing of food.
- Do minimal processing of different food samples.

Job/Employment Opportunities:

- Students can establish his/her start-up specialized in minimal food processing of foods.
- Students can help in Research and Development in food industries to explore various novel technologies for minimal processing.
- Students can either collaborate or join with any Food Industry and help in developing various thermal and non-thermal techniques in food processing.

Syllabus

THEORY **Total Lecture (Nos): 15 Hours**

Unit 1: Basic minimal processing (**8 Hours**)

Introduction and importance of minimal processing, Preparation and pre-treatments, Minimal processing of foods by thermal, refrigeration and freezing methods, MAP (Modified Atmosphere Packaging) and CAP (Controlled Atmosphere Packaging). Physiological responses and biochemical changes during minimal processing of fruits and vegetables, Meat, Fish, poultry and Dairy products. Role of minimal processing in economic creation.

Unit 2: Advanced technologies in minimal processing of foods (7 Hours)

Principle and applications of; irradiation, pulsed electric field processing, high pressure processing, pulsed light, ultrasound, ohmic heating, sous vide.

PRACTICALS (30 Hours)

1. To study basic hygiene and sanitation requirements for minimal processing
2. Preparation and pre-treatment method for minimal processing of fruits and vegetables.
3. Minimal processing of Meat products.
4. Minimal Processing of fish and Poultry.
5. Minimal processing by Vacuum/ MAP/CAP/ edible coating.
6. Minimal Processing of Dairy Products.
7. To study the shelf life and quality characteristics of minimally processed foodsavailable in the market
8. To study the effect of packaging material on shelf life of different minimally processedfoods.
9. To determine the cost of minimally processed food.

Essential Readings:

- Fellows, P. J. (2009). Food processing technology: principles and practice. ElsevierRahman, M. S. (Ed.). (2007). *Handbook of food preservation*. CRC press.
- Tewari, G., & Juneja, V. (Eds.). (2008). *Advances in thermal and non-thermal foodpreservation*. John Wiley & Sons.

Suggestive Readings:

- Barbosa-Canovas, G. V., Tapia, M. S., & Cano, M. P. (Eds.). (2004). *Novel foodprocessing technologies*. CRC press.
- Bansal, V., Siddiqui, M. W., & Rahman, M. S. (2015). Minimally processedfoods: overview. *Minimally processed foods*, 1-15.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Food Waste and By-product Utilisation

Credit Distribution, Eligibility and Pre-Requisites of The Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (If any)
		Lecture	Tutorial	Practical/ Practice		
Food Waste and By-product Utilisation	2	0	0	2	XII (PCM/PCB)	NIL

Learning Objectives

Environment sustainability is a key area of interest to government, scientist, environmentalist, researchers, and students. The present course is designed to address the issues of food waste and further their utilization into value added products. It's a multidisciplinary subject which can be taken by students of varied background. The objectives of the course are as follow:

- To improve students' understanding of basic food industry waste and by-product.
- To provide students an opportunity in understanding the significance of treating and utilizing food waste and by-products.
- To study effluent treatment plant.
- The practicals provide hands-on training in different type of food waste and by-products, further their utilization.
- After completion of course students can apply for courses specific to any category of food waste and further specialize in it.

Eligibility: Being interdisciplinary in its nature and scope, the course will be equally engaging and beneficial for students of all subject streams.

Learning Outcomes

After Studying this course, the student will be able to:

- Identify waste produced from different sectors of the food industry.
- Utilise waste from the food industry.
- Understand waste water treatment.

Skill Development and Job Opportunities:

- Students are eligible to handle the processing and operations at effluent treatment plant running in food and chemical-based industries.
- Students can provide consultancy to waste industries.
- Students can also start with hands-on training to students and industrialist on handling and utilizing the waste from industries.
- Students can work with Ministry of Agriculture to devise ways of utilizing the food waste.

- Students can start his/her own start-up by providing waste water treatment services to food industries.
- The course will provide basic training enabling students to apply to advanced food waste management courses.

Syllabus

Practical **60 hours**

2. Identification of waste from agriculture and food processing (Dairy/ Meat/ Fruits Vegetables / Alcoholic beverages/ cereals)
3. Study and layout of waste water treatment system (ETP)
4. Identification of co-products from F&V industry, estimation and utilization to develop value added products (pectin, banana fibre, lycopene from tomato waste, watermelon/ pumpkin rind).
5. Identification of waste from animal industry and utilisation to develop value added products (gelatin, egg shell).
6. Identification of various co-products from dairy industry, estimation and utilization to develop value added products (utilisation of ghee residue, buttermilk beverage, whey).
7. Identification of co-products from cereal industry, estimation and utilization to develop value added products (cereal husk, wheat fibre).
8. Determination of physico-chemical properties of wastewater.
9. Production of alcohol/ acetic acid from waste material.

Essential readings

- Marriott, N. G., Gravani, R. B., & Schilling, M. W. (2006). Principles of food sanitation(Vol. 22). New York: Springer.
- Sadasivam, A, & Manickam, A. (2021). Biochemical Methods. New Age InternationalPublishers.
- Green, J. H., & Kramer, A. (1979). Food Processing. Waste Management. Avi PublishingCompany, 629.
- Herzka, A. and Booth, R.G. Food Industry and Trade: Recycling Waste. Applied SciencePublishers, 1981.
- Tegge, G., Green, J. H., and A. Kramer. Food Processing Waste Management; AVIPublishing, 1979

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

INDIAN SNACK INDUSTRY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisite of the Course (if any)
		Lecture	Tutorial	Practical/ Practice		
Indian Snack Industry	2	1	0	1	Class XII	NIL

LEARNING OBJECTIVES

With changing lifestyles and rising income levels, the processed Indian Snack industry has grown exponentially in recent years due to a massive upsurge in the demand for snack (ready to eat/ ready to cook) products in India. This course will equip our students with knowledge and skills necessary to work in the snack industry, contribute to the growth and after gaining some experience start-up their own micro/macro enterprises.

The learning objectives of the course are:

- To provide students with the basic knowledge of Indian snack industry.
- To familiarize students with different types of Indian snacks.

LEARNING OUTCOMES

After Studying this course, the student will be able to

- Describe various aspects of Indian snacks industry and regional snacks.
- Identify various types of snacks and their processing
- Prepare traditional, regional and healthy snacks.

SKILL DEVELOPMENT AND JOB OPPORTUNITIES':

Employment Opportunities:

- Apprentice in Small Catering units/ Kiosk/ Restaurant
- Start-up of micro/macro enterprises
- Able to set up home based/ small scale food catering units
- Work in Cloud Kitchen
- Food Stylist / Designer

SYLLABUS

Credits: 2 **Total lectures (45): 45 Hours/ 15 weeks**
Theory: 30%, Credit – 1 (Lectures – 15)
Practical/ Field work/ Hands on learning: 70%, Credit – 1 (Lectures – 30)

Theory **(6 hours)**

Unit 1: Indian Snack Industry Current Scenario

Description: This unit is an introductory unit about what is a snack food, the history and current trends of snacks industry and regional snacks of India.

Subtopics:

- Definition and history of snack foods in India.
- Current scenario of Indian snack industry.
- Indian regional snacks and their salient features.

Unit 2: Processing of Snacks **(9 hours)**

Description: This unit is about different types of Indian snacks and common packaging materials and techniques used in snack industry.

Subtopics:

- Packed Snacks of India: Classification of packaged snacks, common packaging materials and techniques
- Ready to cook (RTC) snacks, Instant snacks, Freshly prepared snacks, Extruded snacks.
- Usage of oils for frying and various seasonings
- Healthy snacks preparations (innovations in snack preparation)
- FSSAI License and regulations

PRACTICALS **30 hours**

1. Weights, Measures and Food hygiene practices **(2 hours)**
2. Basic cooking terminologies and techniques of preparation **(2 hours)**
3. Pakoras/ fritters: Assorted pakoras, Bondas and its variations **(2 hours)**
4. Cutlets and Tikkis – Mixed Veg cutlets,Sago cutlets, Aloo tikki, Vegetable tikki, **(2 hours)**
5. Dough snacks: Kachori, Samosa, Spring rolls, Mathri, Kathi rolls, Pani puri **(4 hours)**
6. Vadas: Dahi vada, Masala vadas, Medu vada and accompaniments **(2 hours)**
7. Dips (Accompaniments): Mint chutney, Imli chutney, coconut chutney, Salsa sauce, Hummus, Hung curd dips, Guacamole etc. **(4 hours)**
8. Marinates: Curd marinates, Green marinates, Pickled marinate etc. **(2 hours)**
9. Tikkas and Kababs: Paneer tikka, Soya chaaps, Seekh kabab, Hara kabab **(2 hours)**

10. Healthy snacks 1: Sprouts, Cheela, Roasted snacks, Bhel, Fruit chat **(2 hours)**

11. Healthy Snacks 2: Fermented snacks (Idli (variations), Dhokla) **(2 hours)**

12. Extruded snacks: Bhujia, Chakli, Fafda, Gathiya **(2 hours)**

13. Packaging materials and techniques of packaging snacks **(2 hours)**

ESSENTIAL READINGS:

- Raina, U., Kashyap, S., Narula,V., Thomas, S., Suvira, Vir, S., & Chopra, S. (2005). Basic Food Preparation – A Complete Manual. Delhi: OrientLongman.
- Khanna, K., Gupta, S., Seth, R., Mahana, R., &Rekhi, T. (2004). The Art and Science of Cooking. Delhi: Phoenix Publishing House PrivateLimited.

SUGGESTED READINGS:

- Kumar, B. (2021). Theory of Culinary Arts Delhi: RudraPublications
- Arora, K. (2011).Theory of Cooking. New Delhi Frank Bros &Co.
- Lusas E.W., Rooney, L.W. (2002). Snack Food Processing: Delhi, CRC Press LLC.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Paper and Skill Progression

The paper provides understanding a huge untapped sector if food wastage. This waste across globe is an environment concern. Students will be able to deeper understanding to the huge market of food wastage from industries. The course is designed to provide exclusive hands on training to students so that they can contribute the same to industries in search of food waste management.

Sustainable Eco-Tourism and Entrepreneurship

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Coursetitle& Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Sustainable Eco-Tourism and Entrepreneurship	2	0	0	2	Class XII	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- To train students in concepts and principles of sustainable ecotourism leading to a new generation of entrepreneurs
- To inculcate field-based practical skills in translating ecological systems into wealth generation while conserving natural resources
- To transform local biological wealth into a hub of global attraction and generate a scientific basis of Indian traditional knowledge

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to develop next-generation ecological entrepreneurs
- After studying this course, students will be able to evolve eco-literate society by integrating market-based instruments with eco-cultural knowledge of traditional societies
- After studying this course, students will be able to practice ecological knowledge for wealth generation, environmental conservation, and popularization of Indian traditional knowledge

SYLLABUS

Practical/Hands-on Exercises **(02 Credits: 60 hours)**

- Assess the current state of ecotourism in little-known/explored areas and examine ecotourism potential
- Field surveys to identify the existing locations having ecological, wildlife, scenic, and ethnic potential for ecotourism and analyze existing prevalent eco-practices having the potential to integrate with ecotourism programme
- Identify ten plant species having ecological, economic, and cultural significance as ecotourist

attraction

- Develop stories on the selected wild habitats to attract ecotourists from within and outside the country
- Identify suitable track and prepare a checklist of birds and animals with their stories for a diverse group of ecotourists
- Examine the current state of natural resources and develop suitable messages and appropriate media for educating different target groups
- Survey and identify the target group for ecotourism based on their age, education, economic and other criteria and evaluate their psychological barriers to ecotourism
- Conduct inventory of facility and analyze a preliminary competitive advantage over ecological attractions in the nearby area
- Analyze tourist spending patterns and track preferences for ecotourism attractions in nearby areas and add value to ecological, wildlife, and cultural attractions
- Survey attitude and perception of residents regarding ecotourism plan and analyze costs and benefits of the sustainable ecotourism development programme using a demand-driven marketing approach
- Develop messages, stories, and pictures to attract tourists and promote ecotourism in the target area
- Analyze basic elements of ecotourism, the special needs of ecotourists, develop trips and travel packages offering an array of experiences and predict the market trends
- Develop ecotourist activities for individuals, families, and groups and craft social media campaigns for the proposed ecotourism business
- Develop a plan for strategic alliances and partnerships with other projects/groups /organizations for public- private partnership in the proposed ecotourism programme

Teaching and learning interface for practical skills:

To impart training on technical and analytical skills related to the course objectives, a wide rangeof learning methods will be used, including

(a) laboratory practicals;

(b) field-work exercises;

(c) customized exercises based on available data;

(d) survey analyses;

(e) developing case studies;

(f) demonstration and critical analyses;

(h) experiential learning individually and collectively.

Prospective sector(s):

- Forest Departments
- Tourism industry
- World Bank
- UNDP
- WWF
- Environmental NGOs

Suggested Reading:

- Ballantyne, R. and Packer, J., 2013. International Handbook on Ecotourism. Edward Elgar Publishing Limited, UK
- Blumstein, D.T., Geffroy, B., Samia, D.S. and Bessa, E., 2017. Ecotourism's promise and
- Peril. A Biological Evaluation. Springer Int. Publ. (Chapters 10–11)
- Fennell, D.A., 2014. Ecotourism. An Introduciton. Routledge, London, UK.
- Fletcher, R., 2014. Romancing the wild. In Romancing the Wild. Duke University Press.

- Tanguay, G.A., and Rajaonson, J., (2015). Evaluating Sustainable Tourism Using Indicators:
- Problems and Solutions. In: Brophy, S.C., (Ed), Ecotourism: Practices, Benefits and Environmental Impacts. Nova Science Publishers, pp. 119 – 134.
- Wearing, S. and Schweinsberg, S., 2019. Ecotourism: Transitioning to the 22nd century. Routledge

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

E-Tourism

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Coursetitle& Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
E-Tourism	**2**	**0**	**0**	**2**	**Class XII**	**NIL**

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn about the application of e-business in tourism sector with understanding of contemporary issues of the use of electronic technology in the tourism business.
- To learn about e-business strategies and how to apply it to help them comprehend a variety of basic e-business ideas and theories.
- To teach fundamental concept of what e-business is and how to conduct e-business successfully in the tourism sector.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to gain insight into concept of e-tourism, travel intermediaries and travel websites.
- After studying this course, students will be able to learn and explain the emerging ICT tools and its impact in the industry.
- After studying this course, students will be able to understand and implement the use of social media platforms/artificial intelligence in e-tourism.

SYLLABUS OF SEC-36

Unit-I **(20 hours)**

Introduction to E-tourism, stages of ICT revolution, ICTS and new business tools, Strategic and Operational use of IT in Tourism, The Internet and tourism – a powerful combination. Networks for intermediaries: Travel trade intermediaries-Features of a travel trade web site, implementing a travel trade website, online travel intermediaries.

Unit– II **(20 hours)**

E-business for Destination Management Organizations: Principles and concepts − Positioning DMOs in value net, destination e-business system model, e-Business Partnerships for DMOs, Case Studies of Red Apple DMC, OYO Rooms, OLX, Zoom Car, Ofo Cycles etc.

Unit– III **(20 hours)**

Social Media Marketing in Tourism - Facebook, Twitter, YouTube, WhatsApp - Travel Blogs −Usage of Artificial Intelligence- Virtual Reality - Challenges for conventional business models and Competitive strategies.

Essential/Recommended Readings

- Reynolds, Jonathan. (2012). E-Business: A management Perspective. Oxford University Press.
- Kulkarni. P, Jahirabadkar. S & Chande. P. (2012). E-Business. Oxford University Press.
- World Tourism Organization. (2001). E-business for tourism: Practical guidelines for tourism, Destinations and businesses. World Tourism Organization.
- D. Buhalis: e-Tourism, Information Technology for Strategic Management
- Buhalis & Costa: Tourism Business Frontiers
- Poon: Tourism, Technology and Competitive Strategies Harish Bhatt & Badan: Impact of ICT in Tourism

Suggested Reading:

- Stiakakis. E. & Georgiadis C. K. (2009). Drivers of a tourism e-business strategy: the impact of information and communication technologies. Oper Res Int J. DOI 10.1007/s12351-009-0046-6.
- European Commission (2004). Electronic Business in Tourism: Key issues, case studies, conclusions. European Commission. Enterprise publications. Sector Report: No. 07-II, August 2004.
- Šimunić. M, Pilepić L., Šimunić M. (2013). Tourism and e-business: the semantic paradigm as a precondition for success. Informatol. 46, 2013., 1, 1-7.
- Buhalis. D., & Hyun Jun S. (2011). E-Tourism. Contemporary Tourism Reviews: Series. Goodfellow Publishers Limited, Woodeaton, Oxford, OX3 9TJ.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Design Thinking

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Design Thinking	**2**	**0**	0	**2**	Class XII	NIL

Learning Objectives

To provide basic understanding of problem search, design process, design thinking and ability to convert an innovative product idea to a prototype.

Learning Outcomes

After studying the course, the student will be able to:

- Understand innovation process
- Do product designing
- Empathy research.
- Do designing brief and proof of concept.
- Do prototyping. product testing and validation

SYLLABUS:

Unit I: Design thinking and innovation in product or process designing. Identifying user needs. Human Centered Design. **(8 hours)**

Unit II: Innovation Opportunities. Problem space exploration. Ideation. Empathy Research **(13 hours)**

Unit III: Novel product or process Opportunities. Solution space exploration. Design brief. Concept generation. User validation **(13 hours)**

Unit IV: Converting ideas to product. Developing Prototypes. Iterative improvement. Proof of concept - Product testing and validation **(18 hours)**

Unit V: Disruptive design innovations – case studies **(8 hours)**

Teaching Plan

Week 1: Design thinking and innovation in product or process designing
Week 2: Identifying user needs. Human Centered Design

Week 3: Innovation Opportunities.
Week 4: Problem space exploration. Ideation.
Week 5: Empathy Research
Week 6: Novel product or process
Opportunities. **Week 7:** Solution space
exploration. Design brief.**Week 8:**
Concept generation. User validation
Week 9: Converting ideas to product.
Week 10: Developing Prototypes.
Week 11: Iterative improvement.
Week 12: Proof of concept - Product testing and validation
Week 13, 14 & 15: Disruptive design innovations – case studies

Essential Readings:

1. *Creative Confidence: Unleashing the creative potential within us all* by Tom Kelley &David Kelley, Crown Business (New York, 2013)
2. *The Design of everyday things* by Don Norman, Basic Books (2013)
3. *Design Thinking: Understanding how designers think and work* by Nigel Cross,Bloomsbury Visual Arts (2019)

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Innovation and Entrepreneurship

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THECOURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Innovation and Entrepreneurship	2	0	0	2	Class XII	NIL

Learning Objectives

The primary objectives of the course will be to:

- Encourage the process of creative thinking and innovation
- Build an entrepreneurial perspective to identify and tackle problems and explore new opportunities
- Gain insight into building business models and plans
- Identify tools and strategies that entrepreneurs may use for start-up, innovation and reinvention
- Understand how to go from an idea to product and scale it up for sustainability
- Develop skills to work in teams and build connections, collaborations and social networks .

Learning Outcomes

By the end of the course students should be able to:

- Identify and comprehend the concepts of creativity, innovation and invention in various contexts.
- Enrich their theoretical and conceptual foundations in entrepreneurship.
- Gain hands-on experience that shall empower them to identify business and social opportunities and venture in the entrepreneurial landscape.
- Prepare themselves to take informed decisions in establishing start-ups and ongoing innovation in organisations.

PEDAGOGY

While suitable concepts and theory will be utilized, the emphasis of the course will be on inquiry driven hands-on activities and experiential learning in a team setting. As this is essentially a group activity based course, the two lectures scheduled for each week shall be held together. The class to be split up ideally in groups of 5 – 7 students each, who will work

together for the rest of the semester on identifying a specific problem and by semester-end present a feasible innovative prototype capable of being funded as a start-up.

SYLLABUS

Unit I: Understanding Creativity

- Understanding the concept and process of creativity; students exploring within themselves the nature of the creative process; approaches to understanding creativity (Ref. B1)
- Differentiate between invention and innovation (Ref. OR1)
- Understanding entrepreneurial mindset and skills (creativity, decision making, risktaking behaviour, networking) and entrepreneurship in different contexts (eg. Social, Cooperative, Commercial, Public, Not for Profit organisations) (Ref. B1)
- Case studies of some successful innovations/start-ups – Different group can be given a different Case Study and the groups can have a discussion on same (Ref. Suggestive Case Studies A)

(15 practical hours)

Unit II: Ideation

- Identifying a specific problem through observation, contemplation, networking and research (Ref. B2)
- Generating ideas for problem solving using mind mapping, brainstorming, focus groups, idea generation tool kit (SCAMPER) (Ref. B1)
- Learning through failures of others – case studies of some ventures that could not sustain – Different group can be given a different Case Study and the groups can have a discussion on same (Ref. Suggestive Case Studies B)

(**15 practical hours)**

Unit III: Understanding the business

- Building a business plan using the lean canvas model (Ref. OR2)
- Understanding customers/stakeholders and evaluating the business plan through survey/questionnaire/interview/secondary research (Ref. B1 and B2)
- Designing, prototyping and iteration (Ref. B2)
- Networking and growth strategies (Ref. B3)
- Building and managing organisations (Ref. B3)
- Role of leadership and team based culture (Ref. B3 and OR4)

(**20 practical hours)**

Unit IV: Venturing Forth

- Financing the innovation: pitching and communicating the idea
- Sources of finance: crowdfunding, venture capital, equity funds, angel investing, borrowing (including government initiatives, bank and public funded schemes) (Ref. OR5 and OR6)
- Various forms of IPR (patent, copyright, trademark, geographical indication, industrial design) (Ref. OR7 and OR8)
- Setting and scaling up (Ref. B3)
- Entrepreneurial resilience and ongoing creativity (Ref. B1)

(**10 practical hours)**

Suggested Readings: Books

B1.The Innovator's DNA: Mastering the Five Skills of Disruptive Innovators, Jeff Dyer, Hal Gregersen, C.M. Christensen, Harvard Business Review Press, 2011

B2. Design Thinking: Business Innovation, Maurício Vianna, Ysmar Vianna, Isabel K. Adler, Brenda Lucena, Beatriz Russo, MJV Press, 1st Electronic Edition, 2011
(also available at https://cdn2.hubspot.net/hubfs/1701231/Documents/Design_Thinking_-_The_Book/Design_Thinking_The_Book.pdf)

B3. Contemporary Strategy Analysis: Text and Cases, Robert M Grant, Wiley, 9th Edition,2016 (Chapter 6 and Chapter 9)

Online Resources

OR1. Discovery, Innovation and Invention
https://www.laits.utexas.edu/~anorman/long/DII.html

OR2. How to create your lean canvas
https://leancanvas_production.s3.amazonaws.com/cms/LeanCanvas.pdf

OR3. Organisational behaviour and human relations, Module 12, Creativity in decision making
https://courses.lumenlearning.com/wm-organizationalbehavior/

OR4. Organisational behaviour and human relations, Module 13, Leadership
https://courses.lumenlearning.com/wm-organizationalbehavior/

OR5. Sources of Funding Innovation and Entrepreneurship
https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2020-chapter4.pdf

OR6. Government Schemes for Startups
https://www.startupindia.gov.in/content/sih/en/government-schemes.html

OR7. Intellectual Property Rights in India
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/627956/IP-Rights-in-India.pdf

OR8. What is Intellectual Property? WIPO 2020 doi:10.34667/tind.42176
https://www.wipo.int/publications/en/details.jsp?id=4528

Suggestive Case Studies A
1. Amul
2. Goonj
3. Aravind Eye care systems
4. Apple
5. Pixar
6. ISRO
7. Khan Academy
8. Nyka
9. Swiggy

10. Sulabh International
11. OYO
12. Mumbai's Dabbawalas
13. Lijjat Papad
14. Jaipur Rugs
15. WOW! Momo
16. Biryani by Kilo

Suggestive Case Studies B

1. Nokia
2. Cafe Coffee Day
3. HMT watches
4. Atlas Cycles
5. Jet Airways
6. Kodak
7. Stayzilla
8. SKS Microfinance IPO
9. Satyam Computers
10. Groupon Inc.

Weekly Plan:

Week I: Understanding the concept and process of creativity; Approaches to understanding creativity; differentiate between invention and innovation.

Week II: Activity week - Students exploring within themselves the nature of the creative process in groups (eg. exploring the surroundings for possible problems and challenges that may have innovative solutions).

Week III: Understanding entrepreneurial mindset and skills (creativity, decision making, risk taking behaviour, networking) in different contexts through discussion of a case study (may select one case study from Suggestive Case Studies A).

Weeks IV - IX: Activity Weeks - The class to be split up ideally in groups of 5 – 7 students each, who will work together for the rest of the semester on identifying a specific problem and by semester-end present a feasible innovative prototype capable of being funded as a start-up.

Week IV: To begin with, each group shall identify a problem through observation,contemplation, brainstorming, networking and research.

Week V: Each group to generate ideas for solving their identified problem using mind mapping, focus groups, idea generation tool kit (SCAMPER).

Week VI: Each group to critically assess the feasibility of the proposed ideas by learning through the failures of others – case studies of some ventures that could not sustain (may use a case study from Suggestive Case Studies B).

Week VII: Each group to build a business plan using the lean canvas model and survey/questionnaire/interview/secondary research.

Week VIII: Each group to design and prototype their proposed business solution/model/product.

Week IX: The groups evaluate their proposed business plan/model using feedback from networking. Submission of formal business plan (written) by each group.

Week X: Formulating growth/scaling up strategies*;* building and managing organisations*;* role of leadership and team based culture, *e*ntrepreneurial resilience and ongoing creativity.

Week XI: Financing the innovation: pitching and communicating the idea. Sources of finance: crowdfunding, venture capital, equity funds, angel investing, borrowing (including government initiatives, bank and public funded schemes)

Week XII: Various forms of IPR (patent, copyright, trademark, geographical indication, industrialdesign)

Week XIII, XIV and XV: Activity weeks - Submission of final project report (written) and presentation (oral) by each group, Viva.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

SEC Museum and Museology

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Museum and Museology	2	1	0	1	XII Class	NA

Learning Objectives

The objective of this paper is to introduce and provide basic understanding about Museum and Museology as a discipline. Through this paper the students will be exposed to various aspects of museum history- (museum movement in India, particularly), its functioning, types and purpose. It will highlight the role of the museum as an important centre for preservation and dissemination of knowledge. This paper is of particular value to those who are seeking careers as curators, art collectors, researchers and conservators.

Learning outcomes

Upon completion of this course the student shall be able to:

- Understand museum as a resource center.
- Understand the historical process of institutionalization of archaeology and culture through museums.
- Develop an insight into the various roles of museum an organizer, preserver and manager of artifacts.
- And how museum is an effective center for dissemination of knowledge and information, and space for dialogue and interaction.
- Also develop some understanding about new museums.
- A student having studied this course will be skilled in culture and tourism based industries: possible employment includes tour guides, archaeology assistants, archivist, jobs in art galleries, museums, auction houses, researchers in NGOs and other institutions, culture and art based writing and journalism and on social media

SYLLABUS

Unit I - Theory (15 hours)

(i) Definition and meaning of Museum and Museology.

(ii) History of museums in India- Colonial to post independence.
Research based project (any two): History of- National Museum/ Indian Museum/ Salar Jung Museum/Chhatrapati Shivaji Maharaj Vastu Sangrhalay

(iii) A brief introduction to New Museology

Unit II - Practical (30 hours)

(i) Various functions of a museum- Collection, documentation (manual, digital and photographic), preventive conservation and exhibition should be taught in conjunction with practical/ project.

(ii) Types of museums: Project

Practical/Project: **Visit any one museum** to understand the nature and scope of its collection and exhibition techniques - National Museum/ Redfort Archaeological Museum/National Craft Museum and Hastkala Academy/ National Gallery of Modern Art/ National Science Centre /Gandhi Smriti Museum/Delhi Sulabh International Museum of Toilet/ Sanskriti Kendra (individual/ group assignments may be designed and assigned on one of these museums)

30 hours for practical with minimum 3-5 Days for Museum visit and field work.

Essential/recommended readings

Unit I:

This unit introduces students to the concept of Museum and Museology. With the help of International Council of Museum (ICOM) definitions - meaning, purpose and changing roles of museum can be understood. Unit will look into the history of colonial museums and their transformation into National Museums in the post-independence era. With the help of case studies of various national museums and their making, their historical trajectory can be studied and understood in the background of the museum movement in India. Provide a brief introduction to the concept of new museology and how new museums became an agent of change in the Museum world.

- Burdhan, Anand (2017), Colonial Museum: An Inner History, Research India Press, Delhi
- Choudhary, R. D. (1988). Museums of India and their Maladies. Calcutta: AgamPrakashan.
- Desvaltees, Andre, & Francas Mairesse Arrond Cown (2010), Key concept in Museology ICOM-2010, Paris.
- Dwivedi, V P, Museums and Museology: New Horizons. Agam Kala Prakashan

- Guha-Thakurta, Tapti. (2004). Objects, Histories: Institution of Art in Colonial India, New York: Columbia University Press.
- Mathur, Saloni. (2007). India by Design: Colonial History and Cultural Display. Berkley: University of California
- Mathur, Saloni. (2000). "Living Ethnological Exhibits: The Case of 1886", Cultural Anthropology, Vol. 15 No. 4, pp 492-524
- सहाय, शिव स्वरूप (201 9). संग्रहालय की ओर , मोतीलाल बनारसीदास, नई दिल्ली
- Tiwari, Usha Rani and Pandey, Aarti. 2016. नव संग्रहालय विज्ञान. Kala Prakashan
- Vergo, Peter, (1997)New Museology. Germany: Reaktion Books.

Unit II:

In this unit various functions of museum are to be studied. With the help of examples and case studies, types of Museums and their features will be discussed. By studying the nature of the collection and the exhibition methods student shall be able to identify the museum types.

- Aggarwal, O. P. (2006). Essentials of Conservation and Museology, Delhi: Sundeep Prakashan.
- Agrawal, O.P. (Translation: Tiwari, R.P.) (2012) पुस्तकालय सामग्री और कला वस्तुओं का परीक्षण, Delhi.
- Dean, David and Gary, Edson (1994) Handbook for Museums, Routledge.
- Dwivedi, V P, Museums and Museology: New Horizons. Agam Kala Prakashan
- Jain, Sanjay (1999), म्यूजियम और म्यूजियोलॉजी एक परिचय, Kanika Prakashan, New Delhi
- Munsuri, Shahida. Museums, Museology and New Museology. India: Readworthy Press Corporation, 2018.
- Nair, S. N. (2011). Bio-Deterioration of Museum Materials, Calcutta: Agam Prakashan
- शुक्ला, गिरीश चंद्र।, संग्रहालय विज्ञान, मोतीलाल बनारसीदास

Suggestive readings

Museum:

- Ambrose Timothy, Paine Crispin (1993, 2006),Museum Basics, Routledge
- Burdhan, Anand (2017), Museological Pedagogy: Colonial Politics versus People's Museography, Research India Press
- Bedekar. V. H, New Museology, Museum Association of India, New Delhi
- Dwivedi, V P, Museums and Museology: New Horizons. Agam Kala Prakashan
- Macdonald, S. (Ed.). (2010). The politics of display: Museums, science, culture. Routledge.London

- Mathur, Saloni and Kavita Singh(reprint2020), no-touching, no spitting, no praying: The Museums in South Asia,Routledge.
- Roychowdhury, Madhuparna (2015). Displaying India's Heritage: Archaeology and the Museum Movement in Colonial India, Orient Black Swan.
- Munsuri, Shahida. Museums, Museology and New Museology. India: Readworthy Press Corporation, 2018
- Macdonald, Sharon (2006), A companion to Museum Studies, Blackwell, UK and Australia.
- Punja, Shobhita, (2014) Treasures: Salar Jung Museum, Hyderabad. Niyogi Books, Delhi.
- Punja Shobhita (2014) Treasure: Chhatrapati Shivaji Maharaj Vastu Sanghralaya, Mumbai, Niyogi Books, Delhi.

Examination scheme and mode:
Total Marks: 100 marks
Internal Assessment: 25 marks
End Semester University Exam: 75 marks
The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

SEC Reading the Archive

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Reading the Archive	2	1	0	1	Class XII	NA

Learning Objectives

This course seeks to develop skills and methods of historical research through the critical evaluation of primary sources. The first unit of the course will emphasize that the historical archive cannot be treated as mere "information" and that issues of authorship, representation and access are crucial to any understanding of primary sources. At the core of the course are three carefully designed basic research projects that will introduce students to a wide variety of primary sources that range from colonial ethnographic and legal texts to visual photographic archives. The student will focus on one kind of archive in each project along with an important text that will illuminate the reading of this kind of archive by a historian.

Learning outcomes

- To expose students to a wide variety of archives used in historical work.
- To introduce students to scholarship that has critically and creatively used different kinds of primary sources.
- To develop skills to access, contextualize, and analyze primary sources and carry out research.
- A student having studied this course will be skilled in culture and tourism based industries: possible employment includes tour guides, archaeology assistants, archivist, jobs in art galleries, museums, auction houses, researchers in NGOs and other institutions, culture and art based writing and journalism and on social media

SYLLABUS

Unit 1: Theory (15 hours)
Introduction to Primary Sources: Power and Memory in the Archive
Unit 2: Projects
Practical (30 hours.)

1) The documentary archive: colonialism and nationalism
2) Photography and the visual archive.
3) Gender, law and the archive

Essential/recommended readings

Unit 1: Introduction to Primary Sources: Power and Memory in the Archive Theory

This unit will introduce the student to the notion of the archive as a cultural institution produced in contexts of power that allows both for the production, and elision of different kinds of historical narratives. It will also underline the issue of access, and digitization which is crucial to researchers today.

Students will be taken for a guided visit to either the National Archives of India or the Delhi State Archives.

Readings:

- Aparna Balachandran and Rochelle Pinto, Archive and Access, Bangalore, Centre for Internet and Society, 2011, 14-29, 50-81. https://cis-india.org/raw/histories-of-the-internet/blogs/archives-and-access
- Joan Schwartz, & Terry Cook, "Archives, Records, and Power: The Making of Modern Memory," Archival Science, Vol. 2, 1-19.

Unit 2: This unit is divided into 3 sections containing research projects that use different types of archives. *The Documentary Archive: Colonialism and Nationalism:*
In this section, the student can choose to do EITHER a project on a colonial text, or on a document produced in the course of the nationalist struggle in India. In the first case, students will understand the making of colonial knowledge; in the second, they will access the voices of peasants filtered through the accounts of the nationalist elite. Students can choose any section/chapter/ pages of the primary source in consultation with the teacher.

a. *Primary source:* H.H. Risley and E.A Gait, Report on the Census of India, 1901; Secondary reading: Bernard Cohn, "The Census, Social Structure and Objectification in India" in Anthropologist Amongst the Historians, Delhi: OUP, 1987, 224-254.
b. *Primary Source:* Shahid Amin, Tridip Suhrud and Megha Tod eds, Thumb Printed: Champaran Indigo Peasants Speak to Gandhi, Navajivan Trust and National Archives of India, 2022.
   Secondary Reading: Shahid Amin, Thumb Printed: Champaran Indigo Peasants Speak to Gandhi edited by Shahid Amin, Tridip Suhrud and Megha Tod, Navjivan Press and National Archives of India, Introduction, xiii-xxxvi.

2) In this section, the students can choose to either do a project on colonial-era photographs or on online personal photographic archives. In the first

case, the student will be engaged with the idea of the camera as a technology of rule; in the second the focus will be on cultural memory and digitization. Students can choose any section/pages/chapter/s of the primary source in consultation with the teacher.

a. *Primary Source:* William Johnson, The Oriental Races and Tribes, Residents and Visitors of Bombay: A Series of Photographs with Letter Press Descriptions, London: W. J Johnson, 1863, https://archive.org/details/gri_33125008252070; Secondary Reading: Christopher Pinney, Camera Indica: The Social Life of Indian Photographs, London: Reaktion, 1997, Chapter 1: 'Stern Fidelity' and Penetrating Certainty.' 17-71.
b. *Primary Source:* The Indian Memory Project https://www.indianmemoryproject.com/
   Secondary Reading: Katja Muller, "Between Lived and Archived Memory: How Digital Archives Can Tell History." Digithum, 19, 2017,1 1-18. https://redib.org/Record/oai_articulo1211444-between-lived-archived-memory-how-digital-archives-can-tell-history

3) In this section, students will reflect on historical archives are gendered in character through an analysis of a legal text on the Age of Consent controversy. The project will allow students see legal debates and law-making as masculine projects even as the legal archive allows us some access to the agency and voices of women. Students can choose any section/pages/chapter/s of the primary source in consultation with the teacher.

a. *Primary Source:* Age of Consent Act Report, Government of India, Calcutta, 1929.
b. *Secondary Reading:* Tanika Sarkar, "Rhetoric against Age of Consent: Resisting Colonial Reason and the Death of a Child-Wife," Economic and Political Weekly. 1993, Vol.28,

1869-1878.

Suggestive readings

- Anjali Arondekar "Without a Trace: Sexuality and the Colonial Archive." Journal of the History of Sexuality, vol. 14, no. 1/2, 2005, 10–27.
- Antoinette Burton, ed., Archive Stories: Facts, Fictions, and the Writing of History (Durham: Duke University Press, 2005)
- Arlette Farge, The Allure of the Archives, New Haven: Yale University Press, 2013, 79-113.
- Crispin Bates, "Race, caste and tribe in central India: the early origins of Indian anthropometry" In Peter Robb (Ed.), The Concept of Race in South Asia, Delhi: OUP, 219-59.

- Edwards, Elizabeth. “Photography and the Material Performance of the Past.” History and Theory, vol. 48, no. 4, 2009, 130–50.
- Kama MacLean, “The Portrait’s Journey: The Image, Social Communication and Martyr-Making in Colonial India.” The Journal of Asian Studies 70, no. 4, 2011 1051–82.
- Ranajit Guha, “The Prose of Counter Insurgency”, Subaltern Studies: Writings of South Asian History and Society, Vol 2, Delhi: Oxford University Press, 1-42.
- Shahid Amin, “Gandhi as Mahatma: Gorakhpur District, Eastern UP, 1921-2’ in R. Guha (ed.), Subaltern Studies: Writings on South Asian History and Society, vol. 3, Delhi, Oxford University Press, 1984, 1-61.
- Tanika Sarkar “A Book of Her Own. A Life of Her Own: Autobiography of a Nineteenth-Century Woman.” History Workshop, no. 36, 1993, 35–65.

Examination scheme and mode:
Total Marks: 100 marks
Internal Assessment: 25 marks
End Semester University Exam: 75 marks
The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

WORKING WITH PEOPLE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
WORKING WITH PEOPLE	**2**	**1**	**0**	**1**	**Class XII**	**NIL**

Learning Objectives

The learning objectives of this course are as follows:

- To inculcate values in strengthening knowledge and skills in field work practice learning
- To develop aptitude and attitude to work in the field
- To enhance skills of self-awareness, self-development, goal setting and time management

Learning outcomes

At the end of the semester the students will be able to

- Develop a practical understanding of using different skills while working with individuals and groups
- Develop skills and competencies to work effectively in field settings
- Acquire understanding about self, goal setting, networking, and communication

SYLLABUS

Course Content

Unit I: Developing Personal and Professional Self **Unit Description:** This unit will provide a conceptual understanding of Self-awareness and sensitivity. The students will learn about goal setting, time management and ethics in social work practice.	**(No. of hours)** **3** **Weeks: I-III**
Subtopics: ● Understanding personal self and professional self.	

● Professional Ethics: Responsibility, accountability, loyalty, commitment, cultural sensitivity and competence. ● Goal setting and time management	
Unit II: Planning for Field Work Practice **Unit Description:** This unit will introduce the students to strategic learning plans required for field work, thematic modules for different target groups and importance of rapport building and communication while working in community.	**(No. of hours)** **4** **Weeks: IV-VII**
Subtopics: ● Preparation of Field work learning plans and strategies. ● Rapport building, initiating dialogues and sustaining communication. ● Thematic learning modules for targeted populations: Children, adolescent, youth and elderly.	
Unit III: Documentation in Field Work **Unit Description:** This unit will focus on documentation and maintaining records while working with individuals, groups and communities. The students will also learn to develop community profile.	**(No. of hours)** **4** **Weeks: VIII-XI**
Subtopics: ● Case records ● Group work records ● Community profile	
Unit IV: Application of Skills and Techniques **Unit Description:** This unit will introduce various skills and techniques required in understanding self and mobilising support.	**(No. of hours)** **4** **Weeks: XII-XV**
Subtopics: ● Understanding Self: Johari Window ● Strength and Weakness- SWOT Analysis ● Mobilising Community Support: Networking, Advocacy and Public Relation	

Practical component (if any) – Unit III & IV application based **(30 hours)**

Essential readings

- Datar,S. et al. (2010). Skill Training for Social Workers: A Manual. New Delhi: Sage Publications
- Kumar, S. (2002).Methods for Community Participation: A Complete Guide for Practitioners. London: ITDG Publishing.
- Nair,R., Juvya,S., & Nadkarni,V. (2020). Field Instructions in Social Work Education, The Indian Experience. Routledge India.
- Subhedar, I. S. (2001). Field Work Training in Social Work. New Delhi: Rawat Publications.

- Trevithik, P. (2000). Social Work Skills: A Practice Handbook. Buckingham, Philadelphia: Open University Press.
- Verma, R.B.S. & Singh, A.P. (2013).Standard Manual for Field Work Practicum in Social Work. Lucknow: New Royal Book Company.

Suggested readings

- NAPSWI. (2016). NAPSWI's Code of Ethics for Professional Social Workers in India. New Delhi: National Association of Professional Social Workers in India

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

LIFE SKILL EDUCATION

Credit distribution, Eligibility and Prerequisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
LIFE SKILL EDUCATION	2	1	0	1	Class XII	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- To impart life skills education in field work practice
- To strengthen life skills for career building, critical thinking, attitudinal base for innovate leadership
- To learn the application of life skills in diverse field work settings

Learning outcomes

At the end of the semester the students will be able to

- Focus on development of values in strengthening knowledge and life skills, bringing high quality standards in field work practice-learning
- Understand the strength-based life skill development, team work, innovate leadership, design thinking and career building skills
- Develop universal human values while utilizing life skills in field work

SYLLABUS

Unit I: Life Skills Introduction **Unit Description**: To introduce students to the basic concepts of life skill management.	**(No. of hours)** **3** **Weeks: I-III**

Subtopics: ● Basic Life Skills: Concept, Components and Significance ● Life Skills Development: National Perspective ● Universal Human Values – Love, Compassion, Truth, Non-violence, Peace, Gratitude, Patience and Tolerance	
Unit II: Basic Life Skills **Unit Description**: To learn the set of essential life skills that can lead to high employability and good work culture.	**(No. of hours)** **4** **Weeks: IV-VII**
Subtopics: ● Team Work Skills: Social Etiquettes, Democratic Decision, and Collaboration ● Innovative Leadership: Initiative taking, Time Management, Capacity building, Life Coaching ● Career Building Skills: Exploring Career Opportunities, Mentoring, Resume Preparation, facing Interview & Group Discussion, Presentation Skills, Creating social media profile	
Unit III: Significant Life skills and Techniques **Unit Description**: To understand potential changes that can be brought about by employing essential life skills	**(No. of hours)** **4** **Weeks: VIII-XI**
Subtopics: ● Developing Strategies for enhancing Life Skills ● Life Skills (Cognitive based): Critical Thinking, Knowledge construction, Evaluating reasoning, Solution Focused Thinking, ● Life Skills (Behavioural Based): Ethics, Integrity, Problem Solving, Decision making	
Unit IV: Application of life skills in Field Work **Unit Description**: To learn the application of essential life skills in diverse settings through case studies about interventions	**(No. of hours)** **4** **Weeks: XII-XV**
Subtopics: Developing specific life skills intervention plan for ● Stress Management and Coping strategies ● Simulation exercises: Brainstorming, Role plays for Team building ● Case Management	

Practical component (if any) – Unit III & IV application based **(30 hours)**

Essential readings

- Bandyopadhyay and Subrahmanian (2008), Gender Equity in Education: A Review of Trends and Factors

- Brinkman, F. J. (2016). Environment, Religion and Culture in the Context of the 2030 Agenda for Sustainable Development, (April).
- Brown, T. (2012). Change by Design. Harper Business
- Care, E., Kim, H., Anderson, K., & Gustafsson-Wright, E. (2017). Skills for a Changing World: National
- Census of India. (2011), Registrar General of India
- Clarke, D., Bundy, D., Lee, S., Maier, C., Mckee, N., Becker, A., Paris, F. (n.d.). Skills for Health Skills-based health education including life skills: An important component of a Child-Friendly/Health-
- Dewan S, Sarkar U (2017) From education to employability: Preparing South Asian Youth for the world of work, UNICEF ROSA
- International Youth Foundation. (2014). Strengthening life skills for youth : A practical guide to quality programming.
- Kwauk C & Braga. (2017) Life skills education is more than teaching skills, Brookings institution Washington DC
- LIFESKILLS EDUCATION. (n.d.). Retrieved from, http://www.cbse.nic.in/cce/life_skills_cce.pdf
- Perspectives and the Global Movement. Retrieved from https://www.brookings.edu/wp-content/uploads/2017/03/global-20170324-skills-for-a-changing-world.pdf

Suggested readings

- Martin, R. (2007). How Successful Leaders Think. Harvard Business Review, 85(6): 60.
- Govt. of India. (2014 & 2016) Educational Statistics at a glance, MHRD,
- Murphy-Graham (2012), Opening Minds, Improving Lives: Education and Women's Empowerment in Honduras
- Sen Madhucchanda (2010), An Introduction to Critical Thinking, Pearson, Delhi
- South, T., Life, A., & Forum, E. (2005). Life Skills-Based Education in South Asia.
- Street, C. (2012). Global Life Skills Education Evaluation, (February).
- WHO (1997). Life Skills Education for Children and Adolescents in Schools. Geneva: WHO.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

PARTICIPATORY LEARNING AND ACTION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
PARTICIPATORY LEARNING AND ACTION	**2**	**1**	**0**	**1**	**Class XII**	**NIL**

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the basic principles and process of using Participatory Learning in field work settings
- To learn various techniques of Participatory Learning for working in rural and urban communities
- To learn the skills involved in application of participatory learning techniques

Learning outcomes

At the end of the semester the students will be able to

- Identify the situations where participatory learning techniques can be applied
- Demonstrate the process of various techniques and skills of participatory learning in field setting
- Analyse PLA data and reflect the same in report writing

SYLLABUS

Course Content

Unit I: Introduction to Participatory Learning and Action **Unit Description**: This unit introduces the students to the concept of	**(No. of hours)** **4**

Participatory Learning and Action (PLA). The students will also learn the advantages of PLA and its use over other similar techniques.	**Weeks: I-IV**
Subtopics: ● Participatory learning Action (PLA): Meaning, origin and principles ● Participatory learning: Basic rules and phases ● Preparations for PLA	
Unit II: PLA : Tools and Techniques **Unit description:** This unit aims to familiarize students with various tools and techniques of PLA which can be applied in community setting.	**(No. of hours)** **4** **Weeks: V-VIII**
Subtopics: ● PLA techniques I: Community mapping (social & resource mapping), ● PLA Techniques II: livelihood analysis, Venn(chapati) diagram, Time line analysis, Vector scoring, (preference ranking, issue prioritization, wealth ranking), Calendars (Seasonal calendar, Daily routine diagram), Transect walk ● Roles and responsibilities of PLA teams	
Unit III: Practical Application of Participatory Learning techniques **Unit Description:** The students will be engaged in hands on learning for practical application of PLA techniques through workshops and group exercises.	**(No. of hours)** **3** **Weeks: IX-XI**
Subtopics: ● Project work: Community Mapping, ● Project work: Need assessment (Calender/Seasonal Analysis/Transect Walk/Vector scoring) ● Project work: Resource identification & Utilization	
Unit IV: Analysis of data through PLA Techniques **Unit description:** The students will learn to analyse the information collected through PLA tools.	**(No. of hours)** **4** **Weeks: XII-XV**
Subtopics: ● Use of PLA for research and community action ● Processing, analysis and interpretation of data generated through participatory learning tools ● Report writing: Tips and techniques	

Practical component (if any) – Unit III & IV application based **(30 hours)**

Essential readings

- Chambers, R (1983) Rural Development: Putting the last first. Longman inc., USA, 1983.

- Chambers, R (2008). Revolutions in Development Inquiry. Institute of Development Studies, 2008, Earthscan, London.
- Mikkelsen, B (1995). Methods for Development Work and Research: A guide for practitioners. London, Sage.
- N. Narayansamy (2009): Participatory Rural Appraisal-Principles, Methods and Application, first edition. Gandhigram Rural University, Tamil Nadu, India
- Ramesh, R (2020):Participatory Rural Appraisal :PRA Application in Rural Development Planning. National Institute of Rural Development and Panchayati Raj Ministry of Rural Development, Government of India.
- Slocum, R; Wichhart, D; Rocheleau, D and Thomas-Slayter, B (eds.) (1995). Power, Process and Participation – Tools for change. London, IT Publications

Suggested readings

- Jules N. Pretty, Irene Guijt, Ian Scoones, & John Thompson (1995): A Trainer's Guide for Participatory learning and Action. International Institute for Environment and Development, London.
- Gosling, L and Edwards, M (2003). Toolkits: A practical guide to assessment, monitoring, review and evaluation. Second edition. Save the Children, UK
- The Leprosy Mission Trust India TLMTI (2015): Participatory Learning Approach Training Manual, New Delhi.
- Mukherjee, N. (1993): Participatory rural appraisal: Methodology and applications (Studies in rural participation). Concept publications,India.
- Mascarenhas, J (1991): Participatory Rural Appraisal and Participatory Learning methods: recent experiences from Myrada and South India, RRA Notes, Issue 13, pp.26–32, IIED, London.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

PROGRAMME MEDIA

Credit distribution, Eligibility and Prerequisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
PROGRAMME MEDIA	**2**	**1**	**0**	**1**	**Class XII**	**NIL**

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the concept of programme media and its importance in field work practice
- To learn about various types of programme media and their effective use in field work
- To learn to demonstrate creative ideas and tools in field settings

Learning outcomes

At the end of the semester the students will be able to

- Learn the concept of programme media in social work
- Develop various programme media tools to be used in field settings
- Demonstrate the skills essential for using programme media in the field work

SYLLABUS

Unit I: Understanding Programme Media **Unit Description:** This unit will give an opportunity to the students to understand the concept of programme media in social work.	**(No. of hours)** **4** **Weeks: I-IV**
Subtopics: • Programme media: Concept, characteristics, purpose and significance • Communication in programme media	

• Role of programme media: propaganda and public opinion	
Unit II: Mediums and Methods of Programme Media **Unit Description:** Student will learn different types of programme media to be used for diagnostic, problem-solving and therapeutic purposes.	**(No. of hours)** **4** **Weeks: V-VIII**
Subtopics: • Types of programme media: Talk, public meeting & hearing, group discussion, press conference, movement, advertisement, campaign, storytelling and entertainment/games • Information and digital literacy: Concept, importance and components • People's participation in programme: Film screening, discussion and review	
Unit III: Handmade Creations and Creative Writings in Social Work **Unit Description:** This unit will give an opportunity to the students to learn various handmade creations and creative writings of programme media to interact with client groups.	**(No. of hours)** **3** **Weeks: IX-XI**
Subtopics: • Handmade creations: Collage, poster making, wall paintings • Creative writings: short story writing, slogans writing and preparing brochures, hand-outs & pamphlets, FAQs • IEC materials: Flip chart, flash cards, flyers, leaflets, banners, hoardings and standee	
Unit IV: Programme Media for Masses **Unit Description:** The students will be engaged in various learning activities related to application of programme media in field settings.	**(No. of hours)** **4** **Weeks: XII-XV**
Subtopics: • Tools preparation: Puppet shows & folk songs, • Performing arts: street plays, drama & theatre &, mime, skit and role plays • Significance of digital media: TV, community radio broadcast and various social media platforms	

Practical component (if any) – Unit III & IV application based **(30 hours)**

Essential readings

- Balwant, G. (1991). Folk Theatre in India. Bombay: Rupa & Co.
- Chen, H. T. (2005). Practical Programme Evaluation: Assessing and Improving Planning,Implementation and Effectiveness. California: Sage Publication.
- Cortright, R. & Hinds, G. (1959). Creative Discussion. New York: The MacmillianCompany.
- Dev, M. P. (2009). Creative Writing: A Beginner's Manual. New Delhi: Pearson Longman.
- Mathur, D. (2003). AASHAA, Short Stories by Indian Women, Odyssey II. London: IndianBookshelf and New Delhi: Star Publishing.
- Menon, M. & Gandhi, V.P. (1997.) Media and Communications - Vol. I. (New InformationOrder). New Delhi: Kanishka Publishers/Distributors.

Suggested readings

- National School of Drama. (2006). Nukkad Natak Rachnaaur Prastuti. Delhi: NSD.
- Mohan, K. &Banerji, M. (1990). Developing Communication Skills. Pilani: Birla Institute ofTechnology and Science.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Finance for Everyone

Credit distribution, Eligibility and Prerequisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre- requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Finance for Everyone	**2**	**1**	**0**	**1**	**Class XII**	**NIL**

Learning Objectives

The Learning Objectives of this course are as follows:

- To offer an integrated approach to the understanding of concepts and applications of financial planning.
- To help the students in their financial planning.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the importance of financial literacy and the institutions providing financial services.
- After studying this course, students will be able to prepare a financial plan, budget and manage personal finances.
- After studying this course, students will be able to open, avail and manage services offered by banks.
- After studying this course, students will be able to open, avail and manage services offered by post offices.
- After studying this course, students will be able to plan for life insurance and property insurance.
- After studying this course, students will be able to choose instruments for investment in shares.

SYLLABUS

Unit 1: Introduction, Financial Planning and Budgeting (4 hours)

Meaning, importance and scope of financial literacy; Prerequisites of financial literacy – level of education, numerical and communication ability; Various financial institutions – banks, insurance companies, post offices, mobile app based services. Need of availing of financial services from banks, insurance companies and postal services. Concept of economic wants and means for satisfying these needs; Balancing between economic wants and resources; Meaning, importance and need for financial planning; Personal budget, family budget, business budget

and national budget; Procedure for financial planning and preparing a budget; Budget surplus and budget deficit, Avenues for savings from surplus, Sources for meeting the deficit.

Unit 2: Banking Services (3 hours)

Types of banks; Banking products and services – Various services offered by banks; Types of bank deposit accounts – savings bank account, term deposit, current account, recurring deposit; pan card, address proof, KYC norm; Various types of loans – education loan, consumer durable loan, vehicle loan, housing loan, short term, medium term, long term, microfinance, bank overdraft, cash credit, mortgage, reverse mortgage, hypothecation, pledge, Agricultural and related interest rates offered by various nationalized banks; Cashless banking, e-banking, check counterfeit currency; CIBIL, ATM, net banking, RTGS, NEFT, IMPS, electronic clearance services (ECS), debit and credit card, app based payment system, bank draft and pay order; banking complaints and ombudsman.

Unit 3: Financial Services from India Post Office (2 hours)

Post office savings schemes: savings bank, recurring deposit, term deposit, monthly income scheme, kisan vikas patra, NSC, PPF, senior citizen savings scheme , sukanya samriddhi yojana; india post payments bank. money transfer: money order, e-money order. instant money order, collaboration with the western union financial services; mo videsh, international money transfer service, money gram international money transfer, indian postal order.

Unit 4: Insurance Services (3 hours)

Life insurance policies: life insurance, term life insurance, endowment policies, pension policies, ULIP, health insurance plans, comparison of policies offered by various life insurance companies, comparison of policies offered by various health insurance companies. Property insurance policies. Post office life insurance schemes: postal life insurance and rural postal life insurance.

Unit 5: Stock Markets – Some Basic Concepts (3 hours)

Terms used in stock markets: SENSEX, NIFTY, primary markets, secondary markets, initial public offering(IPO), follow-on public offering (FPO), offer for sale (OFS), block deal, equity shares, preference shares, debentures, bonus shares, stock split, dividend, buyback, DEMAT account, trading account, delivery instruction slip (DI Slips), blue chips, defensive stocks, face value, market value, market capitalisation, pre-opening session, trading session, opening price, closing price, business days, bull, bear, bull market, bear market, risk, stop loss, derivatives, call option, put option, hedge, holding period; Tax on short term capital gains and long-term capital gains, Mutual Fund and its various schemes.

Practical Exercises: (30 hours)

The learners are required to:

- visit banks, post offices, and insurance companies to collect information and required documents related to the services offered by these institutions and to know the procedure for availing of these services.
- carry out the comparative analysis of different types of life insurance policies.
- carry out the comparative analysis of different types of health insurance policies.
- prepare a personal and family budget for one/six/ twelve months on imaginary figures.

Suggested Readings:

- Avadhani, V. A. "Investment Management" Himalaya Publishing House Pvt. Ltd., Mumbai.
- Batra, J.K., Accounting and Finance for Non-finance Managers, Sage Textbook
- Chandra, P. "Investment Game: How to Win" Tata McGraw Hill Education, New Delhi.
- Kothari, R. "Financial Services in India-Concept and Application" Sage Publications India Pvt. Ltd., New Delhi.
- Milling, B. E. "The Basics of Finance: Financial Tools for Non-Financial Managers" Universe Company, Indiana,
- Mittra, S., Rai, S. K., Sahu, A. P., & Starn, H. J. "Financial Planning" Sage Publications India Pvt. Ltd., New Delhi.
- Zokaityte, A. "Financial Literacy Education" Palgrave Macmillan, London.

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Personal Financial Planning

Credit distribution, Eligibility and Prerequisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre- requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Personal Financial Planning	**2**	**1**	**0**	**1**	**Class XII**	**NIL**

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with different aspects of personal financial planning like savings, investment, taxation, insurance, and retirement planning
- To develop the necessary knowledge and skills for effective financial planning.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the meaning and appreciate the relevance of financial planning.
- After studying this course, students will be able to understand the concept of investment planning and its methods.
- After studying this course, students will be able to examine the scope and ways of personal tax planning.
- After studying this course, students will be able to analyse insurance planning and its relevance.
- After studying this course, students will be able to develop insight into retirement planning and its relevance.

SYLLABUS

Unit 1: Introduction to Financial Planning: (3 hours)

Financial goals, steps in financial planning, budgeting incomes and payments, time value of money. Introduction to savings, benefits of savings, management of spending & financial discipline, Setting alerts and maintaining sufficient funds for fixed commitments.

Unit 2: Investment Planning: (4 hours)

Process and objectives of investment, concept and measurement of return & risk for various asset classes, measurement of portfolio risk and return, diversification & portfolio formation. Gold bond; Real estate; Investment in greenfield and brownfield Projects; Investment in fixed income instruments, financial derivatives & commodity market in India. Mutual fund schemes; International investment avenues. Currency derivatives and digital currency.

Unit 3: Personal Tax Planning: (3 hours)

Tax structure in India for personal taxation, Scope of personal tax planning, exemptions and deductions available to individuals under different heads of income and gross total income. Comparison of benefits - Special provision u/s 115 BAC vis-à-vis General provisions of the Income-tax Act, 1961, tax avoidance versus tax evasion.

Unit 4: Insurance Planning: (2 hours)

Need for insurance. Life insurance, health insurance, property insurance, credit life insurance and professional liability insurance.

Unit 5: Retirement Benefits Planning: (3 hours)

Retirement planning goals, process of retirement planning, Pension plans available in India, Reverse mortgage, Estate planning.

Practical Exercises: (30 hours)

The learners are required to:

- perform electronic fund transfers through net banking and UPI.
- identify certain recent Ponzi schemes in the market.
- prepare tax planning for a hypothetical individual.

Suggested Readings:

- Halan, M. “Let’s Talk Money: You've Worked Hard for It, Now Make It Work for You” Harper Collins Publishers, New York.
- Indian Institute of Banking & Finance. “Introduction to Financial Planning” Taxmann Publication, New Delhi.
- Keown A.J. “Personal Finance” Pearson, New York.
- Madura, J. “Personal Finance”, Pearson
- Pandit, A. “The Only Financial Planning Book that You Will Ever Need” Network 18 Publications Ltd., Mumbai.
- Sinha, M. “Financial Planning: A Ready Reckoner” McGraw Hill Education, New York.
- Tripathi, V. “Fundamentals of Investment” Taxmann Publication, New Delhi.

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

YOGA IN PRACTICE

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Yoga in Practice	**2**	0	0	2	**Class XII Pass**	**NIL**

Total Credits: 02

Learning Objectives:

Students will be able to discern real significance of yogic oprations from original sources and will be prone to practicing in their day to day life.

Learning Outcomes:

(i) Student will form an understanding of the concept of yoga.
(ii) Students will learn various aspects of the science of yoga.
(iii) Theoretical and practical knowledge of Aasanas and pranayams to lead a balanced life.

SYLLABUS OF YOGA IN PRACTICE

Practical
Unit: I

30 hours

(i) Definition and types of yoga:

Karma yoga, Gyana yoga, Bhakti yoga, Laya yoga, Raja yoga, Hatha yoga, Mantra yoga,

Kundalini yoga. (योग एवं 4ोIv – अ□ोाय -१)

(ii) Ashtanga Yoga:
Yam- Ahinsa, Satya, Asteya, Brahmacharya, Aparigrah.
Niyam- Sauch,Santosha,Tapa, Swadhyaya, Ishwarpranidhana
Asan, Pranayam- (the types of Pranayaama: Puraka, rechak & Kumbhaka), Pratyahara, Dharana, Dhyana & Samadhi etc.

(iii) Shat Chakra,s:
Mooladhara, Swadhishthana, Manipur, Anahata, Vishudha, Aagya, Sahasrara-(Sahasradhara chakra). (योग एवं 4ोIv - अ□ोाय – २-३)

Unit: II **30 hours**

Asana,s and their advanteges:-

(i) Asana in standing position:

Surya Namaskara,Tadasana, Padahastasana, Garudasana, Natarajasana, Cakrasana.

(ii) Asana in sitting position:

Padmasana, Vajrasana, Siddhasana, Bhadrasana, Gomukhasana, Shashankasana,Mandukasana, Kukkutasana.

(iii) Asana in stomach side position:

Dhanurasana, Bhujangasana, Mayurasana, Marjarasana, Makrasana.

(iv) Asana in backbone side position:

Uttanapadasana, Naukasana,Sarvangasana, Sheershasana, Savasana etc.

(v) Practice of pranayama- Purak, Rechak and Kumbhaka. (योग एवं 4oIv - अ□oाय – ३ -४,६)

Essential Readings:

1. योग दश◆न – महि◆षपतंजलि, टीकाकार-हरिकृ ◆ास गोय◆◆ा, गीता प्रेस, गोरखपुर, उKर प्रदेश, ४० वां पुनमुद्रण l

2. योग एवं 4oIv – डॉ० िवजय कुमार, चौख□ा िव◆भारती, वाराणसी, उKर प्रदेश, प्र० सं◆रण – २०२१ l

3. प्राणायाम रह4 –(वैyाि◆नक त□ो◆ के साथ)– 4ामी रामदेव, ि◆दD प्रकाशन, ि◆दD योग म◆◆◆◆◆तंजिल योगपीठ ,

कनखल, ह◆◆ार l

4. योग साधना एवं योग ि◆चि◆कTा रह4- 4ामी रामदेव, ि◆दD प्रकाशन, ि◆दD योग म◆◆◆◆◆तंजिल योगपीठ ,

कनखल, ह◆◆ार l

5. शतयुव◆ पु◆◆ – 4ामी रामे◆◆नदा◆◆र4ती, आ◆◆प्रकाशन, कुं डे वालान, ि◆दWी-सं० २०६२ l (ईवैिदक पु◆कालय, मु◆ई)

Suggestive Readings:

1. योग ि◆थरपी – 4ामी अ□ै तान◆ सर4ती, गु◆कुल वृ□ावन Wातक शोध सं□ान, आसफ अली रोड,नई ि◆दWी -२००६ l

2. D◆ायाम का मह◆ – 4ामी ओमान◆ सर4ती, हरयाणा साि◆हw सं□ान, गु◆कुल झ◆र, हरयाणा -

२००६ l

3. आयुव◆दीय पUक◆◆◆ि◆चि◆कTा- आचाय ि◆वh◆ाधर शु4, भारतीय के□ीय ि◆चिकTा प◆◆षद्, नई ि◆दWी

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4. रोग और योग- 4ामी कम◆◆◆◆दा◆◆र4ती, योग प◆◆◆◆शन, मुंगेर , ि◆बहार , सं◆◆◆-

२०१३ l

5. स□ू◆◆◆योग ि◆वh◆ा - राजीव जैन ि◆त्रलोक, मंजुल प◆◆◆शंग हाउस, भोपाल, म◆◆◆देश, सं◆◆◆ -

२००५ l

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Cyber Sphere and Security: Global Concerns

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THECOURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Cyber Sphere and Security: Global Concerns	**2**	1	0	**1**	Class XII	NIL

Learning Objectives

The Learning Objective of this course is as follows:

- To spread awareness and enlightening visions of the indiscriminate and diversified students to ensure their immediate and basic cyber safety and prevent loss due to sheer ignorance.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to apprehend key terms of cyber domain and identify cyber threats.
- After studying this course, students will be able to understand cyber law concepts, intellectual property and Digital Rights Management.
- After studying this course, students will be able to diagnose and examine basic security loopholes, anomalous behavior in internet.
- After studying this course, students will be able to understand principles of web security.
- After studying this course, students will be able to secure and protect personal data with safe Internet usage.
- After studying this course, students will be able to assimilate approaches for incident analysis and response, risk management and best cyber security practices.

SYLLABUS (Theory + Practical)

Unit I: Introducing Cyber 'Sphere' and 'Security' (3 hours)

- Cyber Terminologies: Cyber Sphere, Cyber Security, Cyber Crime, Cyber Attack, Cyber Espionage, Cyber Warfare, Cybernetics
- Cyber Security and Paradigms
- Cyber Security: Objectives and Roles

Unit II: Cyber Crime: Insight, Mitigation and Control (3 + 6 hours)

- Cyber Crime and Cyber Activism: An Overview
- Typologies of Cyber Crimes: Generic Cyber Crimes, Advanced Persistent Threats (APTs), Cyber Threat in Mobile Technology, Cloud Computing and BYOD
- Cyber Crime Identification, Risk Assessment, Management and Control

Unit III: Cyber Policies and Cyber Law (3 + 6 hours)

- Cyber Policies and Cyber Law: Dimensions, Determinants, Dilemmas
- Existing Cyber Policies and Must Follow Up Actions
- Grey Areas in Cyber Laws

Unit IV: Security Tools and Usage (3 + 6 hours)

- Knowledge and Identification of Security Tools
- Cyber Security Aspects
- Cyber Security Toolkits

Unit V: Cyber Security: Case Studies (3 + 6 hours)

- Government Institutions
- Banks and Financial Institutions, Commercial Websites, Point of Sale issues and Online Payment
- Real Time Cases

Essential Readings:

- Bertrand Venard (2019). 'Cyber Security: The New Art of War', Lecture delivered at Developing Countries Research Centre [dcrc], University of Delhi, 1 April 2019.
- Bertrand Venard (2019). 'The Determinants of Cybersecurity Behaviours: Qualitative Research Among French Students' in C. Onwubiko, X. Bellekens, A.Erola, M. Jaatun and C. Nogueira (eds.), Proceedings of the Cyber Science 2019: Cyber Situational Awareness for Predictive Insight and Deep Learning. UK: University of Oxford.
- Bertrand Venard (2019). Cybersecurity Among students. UK: Wolfson College, University of Oxford.
- Bertrand Venard (2019). Cyber Aggressions in the XXIst Century: Equation of a Crisis. UK: University of Oxford.
- Cristopher Hadnagy (2018). Social Engineering: The Science of Human Hacking, 2nd Edition. New York: Wiley
- John Erickson (2008). The Art of Exploitation (2nd Edition). San Francisco: No Starch Press.

- Kevin Mitnick and Robert Vamosi (2017). The Art of Invincibility. Boston: Little, Brown and Company.
- Kevin Mitnick (2012). The Ghost in the Wires: My Adventures as the World's Most Wanted Hacker. New York: Back Bay Books.
- Yogesh Atal and Sunil K Choudhary (2013). Combating Corruption: The Indian Case. Hyderabad and New Delhi: Orient Blackswan.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Harmonium

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Harmonium	2	0	0	2	Class XII	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- To initiate the students to a very popular instrument of Indian music through a general discussion on the role of Harmonium in accompanying various singing forms
- To throw light on the various types of musical instruments that are played in Hindustani music
- To discuss the features of various types of wind instruments
- To teach the student the fundamentals of playing the Harmonium, such as the correct placement of the fingers on the instrument, the right posture for sitting etc.
- To demonstrate tonal exercises, such as palta-s and alankar-s, vital for playing.
- To initiate his training in the realm of playing the instrument with the basic ragas, like Alhaiya, Bilawal and Yaman

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to learn the origin, development and classification of musical instruments.
- After studying this course, students will be able to learn the importance of wind instruments.
- After studying this course, students will be able to learn gat and dhun in prescribed ragas.
- After studying this course, students will be able to demonstrate the various talas and their layakaries.
- After studying this course, students will become well-versed with the techniques of playing Harmonium

- After studying this course, students will be able to achieve dexterity of the hand, through regular practice of the playing exercises at home.
- After studying this course, students will be able to read and learn new compositions in the prescribed ragas.
- After studying this course, students will be able to grasp the various grammatical aspects of the prescribed ragas, like how they arise, what are the respective rules that govern these ragas, how do the notes move in the ragas, what are the performing times of the ragas etc.
- After studying this course, students will be able to learn the art of playing a raga, especially with regard to having the Tabla as an accompanying instrument.

SYLLABUS Practical (60 Hours)

Unit I
Origin and Development of Musical Instruments

Unit II
Classification of instruments

Unit III
Study of Wind Instruments

Unit IV
Writing notation of compositions in prescribed ragas

Unit V

Writing notation of Talas with Thah, Dugun, Tigun and Chaugun in Kaharva

Unit VI

Theoretical knowledge of the prescribed ragas

(Practical - 1): Stage Performance & Viva-Voce:

Prescribed Ragas:

- Alhaiya Bilawal
- Yaman
- Khamaj

Unit I
Ability to play five alankars in the prescribed ragas.

Unit II
One Sargam Geet to be played each in the prescribed ragas

Unit III
One Lakshan Geet each to be played in the prescribed ragas

Unit IV
Two Drut Khyals with elaborations in any of the prescribed ragas

Unit V
Ability to play a Dhun in raga Khamaj

Unit VI
In-depth knowledge of the prescribed ragas

Unit VII
Knowledge and demonstration of the following tala with dugun, tigun and chaugun - Kaharva

Unit VIII
Basic knowledge of Harmonium and its various parts

Recommended Books:

- Sangeet Bodh – Sharadchandra Shridhar. Paranjape:-Madhye Pradesh Hindi Granth
  Acadamy , Bhopal, IstEdition: 1972
- Samvadini – Jayant Bhalodkar :- Kanishka Publication, New Delhi, Ist Edition: 2006
- Dhvani Aur Sangeet - Lalit Kishore Singh:- Bhartiye Gyanpeeth, Lodi Road, New
  Delhi, Ist Edition: 1954
- Kramik Pustak Malika – Part- II :- V.N. Bhatkhande, Sangeet Karyalaya, Hathras,
  Editor: Laxminarayan Garg, January: 2008
- Sangeet ShastraVigyan - Dr.Pannalal Madan:- Rajasthan Hindi Granth Acadamy,
  Jaipur, 2nd Edition: 1991, Abhishek Publication
- Tal Parichay Part III ,Girishchandra Srivastava, Rubi Prakashan , Allahabad, 2nd Edition: June: 2002

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

REGISTRAR

UNIVERSITY OF DELHI

CNC-II/093/1(22)/2022-23/ 197
Dated: 14.09.2022

NOTIFICATION

Sub: Amendment to Ordinance V

[E.C Resolution No. 18-1-20 dated 18.08.2022]

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

VALUE ADDITION COURSES (VACs)
UNDER
UGCF-2022
LISTED UNDER APPENDIX-II-A TO THE ORDINANCE V (2-A) OF THE ORDINANCES OF THE UNIVERSITY
(With effect from Academic Year 2022-23)

In pursuance of the objectives outlined in the National Education Policy 2020, the Value Addition Courses (VACs) seek to fulfil the mandate of providing holistic education to the students. As the NEP elucidates, "the purpose of the education system is to develop good human beings capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination, with sound ethical moorings and values." The Value Addition Courses will introduce students to the rich heritage of the nation as well as to important social concerns of the current times, helping them to make connections between what they learn and how they live.

The courses have a sound theoretical base as well as appropriate hands-on components. At the same time, they clearly set out measurable and attainable Learning Outcomes. Knowledge, in essence, being integrated, these courses are essentially multidisciplinary in nature.

Designed to ignite the intellectual curiosity of the learners, the Value Addition courses will inspire and guide them in their journey of personal and professional development making them thoughtful, well-rounded, and creative individuals, with a sense of service and responsibility towards the Nation.

A student who pursues any undergraduate programme in the University and its Colleges is offered a pool of Value Addition Courses, from which he has to choose one to study in the first Semester. A list of such courses as passed by the Executive Council in its meeting dated 18.08.2022 is as below:

SL.NO.	COURSE TITLE	TOTAL CREDITS: 2
1	Ayurveda and Nutrition	
2	Constitutional Values and Fundamental Duties	
3	Culture and Communication	
4	Digital Empowerment	
5	Emotional Intelligence	
6	Ethics and Culture	
7	Ethics and Values in Ancient Indian Traditions	
8	Financial Literacy	
9	Fit India	
10	Gandhi and Education	
11	Ecology and Literature	
12	National Cadet Corps-I	
13	Panchkosha: Holistic Development of Personality	
14	Reading Indian Fiction in English	
15	Science and Society	
16	Social and Emotional Learning	
17	Sports for Life-I	
18	Swachh Bharat	
19	The Art of Being Happy	
20	Vedic Mathematics-I	
21	Yoga: Philosophy and Practice	
22	भारतीय भक्ति : परम्परा और मानव मूल्य	
23	साहित्य संस्कृति और सिनेमा	
24	सृजनात्मक लेख के आयाम	

VAC 1: AYURVEDA AND NUTRITION

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Ayurveda and Nutrition	02	1	0	1	Pass in Class 12th	NIL

Learning Objectives
The Learning Objectives of the course are:

- To introduce the basic principles of nutrition in Ayurveda
- To link the Ayurvedic nutrition with modern dietary practices for health
- To analyse basic tenets of traditional diets and health recipes
- To understand the contemporary food habits in everyday life

Learning outcomes
The Learning outcomes of the Course are:

- Awareness of traditional food cultures of India
- Evaluate changing food patterns and lifestyle over the years
- Understand Indian Knowledge Systems (IKS) and key Vedic principles with respect to Food and Nutrition
- Apply basic tenets of traditional diets for health and disease
- Prepare selected healthy recipes based on Ayurvedic principles

SYLLABUS OF AYURVEDA AND NUTRITION

UNIT – I Introduction to Ayurvedic Nutrition **(4 Weeks)**

- Ayurveda and Indian food cultures
- Nutrition and lifestyle transition over the years
- Regional Food Traditions of India

UNIT – II Basic principles of Food and Nutrition and Ayurveda (6 Weeks)

- Understanding rich sources of nutrients
- Concept of Doshas & assessment
- Ayurvedic Principles of food habits and factors determining quality of food (Ahara vidhi visheshaayatana)
- FSSAI regulations on Ayurvedic Aahar

UNIT – III Ayurvedic Diets (5 Weeks)

- Principles of Diet: Aharavidhi vidhan, Sattvic, Rajasi, Tamasic foods
- Incompatible food (Viruddha Ahara), Pathya; Apathya; Viprita Ahaar
- Lifestyle Management with Dincharya and Ritucharya
- Application of Ayurvedic diets to stress linked food behaviour

Practical component (if any) – (15 Weeks)

- Visit your local market and classify the available food items according to Sattvic, Rajasi, Tamasic foods
- Conduct a survey of 10-15 households in your locality:

i. to study food behaviour and analyse them in light of Ayurvedic dietary principles of Sattvic, Rajasi, Tamasic

ii. to study the food consumption patterns and intake of incompatible food: Viruddha Ahara, Pathya; Apathya; Viprita Ahaar

iii To know about their adopted lifestyle Dincharya and Ritucharya

- Students are required to visit available e-resources of University of Delhi, Ministry of Ayush with regard to Ayurveda and Nutrition.
- If required, students can share their experiences in the form of a Project Report.
- The students may share their experiences in the form of audio-visual presentations of 15-30 minutes.
- Any other Practical/Practice as decided from time to time

Essential Readings

- Rastogi S (2014) Ayurvedic Science of Food and Nutrition. ASIN: BOOHWMV094, Springer: ISBN-13:978-1461496274
- Rastogi S (2010) Building bridges between Ayurveda and modern science. Int J Ayurveda Res. 1(1):41-46.
- FSSAI regulations on Ayurveda Aahar Regulations 2022. Gazette of India CG-DL-E-07052022-235642. New Delhi, Friday, May 6, 2022/ Vaisakha 16, 1944.
- Frawley D (2012) Ayurvedic healing: A comprehensive guide. Lotus Press, India.
- https://iksindia.org/: Indian Knowledge Systems

Suggested Readings

- Charaka Samhita, Charaka (1998) In: Tripathi BN (ed) Sutra Stahan Maharashitiya Adhyay. Chaukhamba Orientelia, Varanasi.
- Kapoor Kapil & Singh AK Indian Knowledge Systems Volume – 1. Indian Institute ofvAdvanced Study Shimla. Published by DK Printworld (P) Ltd, N.Delhi.

https://www.lkouniv.ac.in.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: CONSTITUTIONAL VALUES AND FUNDAMENTAL DUTIES

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Constitutional Values And Fundamental Duties	02	1	0	1	Pass in Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- Enrich students with knowledge and relevance of the Constitution.
- Develop awareness about Duties and Values.
- Inculcate a sense of Constitutionalism in thought and action.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the Constitution and its relevance
- Appreciate the values and goals embedded in the Constitution.
- Recognise the importance of Fundamental Duties enshrined in the Constitution.
- Apply the spirit of fundamental values and duties in everyday national life.

SYLLABUS OF CONSTITUTIONAL VALUES AND FUNDAMENTAL DUTIES

UNIT – I The Constitution of India – An Introduction (5 Weeks)

- Federal Republic, Rule of Law, Separation of Powers
- Sovereignty, Socialism, Democracy
- Secularism and Sarva Dharma Sama Bhava

UNIT – II Constitutional Values (5 Weeks)

- Justice: Social, Political, Economic

- Liberty: Thought, Expression, Belief, Faith, Worship
- Equality: Equality before law & equal application of laws
- Fraternity: Dignity, Unity and Integrity

UNIT – III Fundamental Duties **(5 Weeks)**

- Reflecting on the ancient Indian notions of righteousness and duty consciousness
- Fundamental Duties- Article 51A [(a) – (k)]
- Legal status of Fundamental Duties - Judicial approach

Practical component (if any) – **(15 Weeks)**

- Reflections on some of the constitutional values/ fundamental duties and its contemporary relevance in day-to-day national life through group discussions and projects.
- Conduct workshops to spread awareness on the Fundamental Duties and Values.
- Students are required to conduct a survey (minimum 25 respondents) on assessing the awareness of the constitutional duties amongst the citizens.
- Students may share their experiences on Fundamental Duties and Values in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Preamble to the Constitution of India, 1950.
- The Constitution of India, Articles - 14, 19, 21.
- The Constitution of India, Fundamental Duties [Ar. 51 A (a) – (k)].

Suggested readings

- Durga Das Basu, et al., Introduction to the Constitution of India (LexisNexis, 26th edn, 2022).
- Leila Seth, We, the Children of India: The Preamble to Our Constitution (New Delhi, Puffin Books, Penguin Books India, 2010).
- Mahendra Pal Singh, V.N. Shukla's Constitution of India, (Eastern Book Company, Lucknow, 13th revised edn. 2017)
- B.R. Ambedkar Selected Speeches, (Prasar Bharati, New Delhi, 2019) available at: https://prasarbharati.gov.in/whatsnew/whatsnew_653363.pdf.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC: Culture and Communication

Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Prerequisite of the Course
		Lecture	Tutorial	Practical/ Practice		
Culture and Communication	02	1	0	1	Pass in Class 12th	NIL

Learning Objectives:

- To focus on traditional values disseminated from Indian cultural heritage.
- To understand the interconnections between the legacy of our past and needs of our contemporary society.
- To learn to adapt, interact and celebrate our diversity and pluralistic culture.
- To develop communication skills in speaking, listening, reading and writing and apply them in our quotidian life as young citizens of contemporary India.
- To integrate ethical values and life skills.

Course Outcomes

- Students will be able to appreciate the relevance of ancient Indian wisdom and core ethical values in our contemporary life.
- Students will be able to engage in a dialogue between the past and the present and inculcate the best principles towards a meaningful life.
- Students will be encouraged to involve themselves in team work and group activities to address challenges faced in metropolitan cities.
- Students will be able to develop communication skills, that is, analytical reading, empathetic listening, considerate speaking as well as informed writing.

- Extension activities will equip the students, drawn from diverse backgrounds, with life skills and confidence to integrate with a multicultural environment and work towards an inclusive community.
- Students will be encouraged to envisage and work towards an ethically robust society and thereby strengthen the nation.

UNIT - I Ethical Values from Indian Cultural Heritage • *Vasudhaiva Kutumbakam* • United We Stand, Divided We Fall • *Ek Bharat, Shresht Bharat*	**3 Classes**
UNIT - II Developing Life Skills • Empathy • Adaptability • Conserving our natural resources • Sharing knowledge resources	**4 Classes**
UNIT - III Effective Communication in Everyday Life • Empathetic listening • Considerate speaking • Analytical reading • Informed writing	**8 Classes**

Practical/ Practice Component (15 Sessions of 2 hours each= 30 hours)

As hands-on experience is an essential component of the course, this section will focus on the practical aspects to correlate with the fundamental principles and learnings of the theory portion. Students will be encouraged to use the communication tools learnt through Unit 3 and corroborate. the continuities of core principles studied in Unit 1 and 2.

- Students will be asked to conduct surveys/interviews in their neighbourhood or commuting routes to assess the nature and quality of negotiating our cultural diversity and pluralist traditions.

- Students would be assigned visits to old-age homes, hospitals, cancer wards, etc. to interact and write about their experiences with old people, caregivers, patients, nursing staff, helpers, etc.
- They will also be assigned visits to historically important places and monuments within the city and also converse with the tourists in order to trace a comprehensive view of the rich cultural history of India. They may create video documentaries, take and record tourists' interviews and/or write a journal entry of the visit using the communication skills learnt.
- Students shall make group presentations or individual reports on the activities undertaken. Discussions with classmates and the teacher shall be undertaken to evolve clarity of vision on the ethical values and effective communication skills learned through this course.
- Any other related activity.

Essential Readings:

- Aurobindo, Sri. *Introduction To The Gita*. Sri Aurobindo Ashram Press, 2017. pp 23-40
- Dhanavel. S.P. *English and Soft Skills*. Orient Black Swan, 2010.
- Haksar, A. N. D. 'Chanakya Niti Shastra', *Chanakya Niti*. India, Penguin Random House India Private Limited, 2020.
- Malik, Keshav. "A Dehumanized Environment". *Culture of Peace: Experience and Experiment*, edited by Baidyanath Saraswati. Indira Gandhi National Centre for the Arts, New Delhi, 1999. pp 77-79
- Murthy, Sudha. 'How to Beat the Boys', *Three Thousand Stitches: Ordinary People, Extraordinary Lives*. Penguin Books, 2017.
- Ramanujan, A.K. 'A Flowering Tree', Cultural *Diversity, Linguistic Plurality & Literary Traditions in India.* Department of English, OUP, 2015. pp 125-138.
- Vande Mataram Song from Chatterji, Bankimcandra. *Anandamath, or The Sacred Brotherhood*. Translated by Julius J. Lipner, Oxford University Press, 2005. pp 297-299.
- Vivekananda, Swami. "Response to the Welcome and Address at the Final Session." *Swami Vivekananda: A Contemporary Reader*, edited by Makarand R. Paranjape, Routledge, New Delhi, 2015, pp. 3–4,18–19.

VAC 1: DIGITAL EMPOWERMENT

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Digital Empowerment	02	1	0	1	**Pass in Class 12th**	NIL

Learning Objectives

The Learning Objectives of this course are as follows:
- Understand the digital world and need for digital empowerment
- Create awareness about Digital India.
- Explore, communicate and collaborate in cyberspace.
- Building awareness on cyber safety and security.

Learning outcomes

The Learning Outcomes of this course are as follows:
- Use ICT and digital services in daily life.
- Develop skills to communicate and collaborate in cyberspace using social platforms, teaching/learning tools.
- Understand the significance of security and privacy in the digital world.
- Evaluate ethical issues in the cyber world

SYLLABUS OF DIGITAL EMPOWERMENT

UNIT – I Digital inclusion and Digital Empowerment **(5 Weeks)**

- Needs and challenges
- Vision of Digital India: DigiLocker, E-Hospitals, e-Pathshala, BHIM, e-Kranti (Electronic Delivery of Services), e-Health Campaigns
- Public utility portals of Govt. of India such as RTI, Health, Finance, Income Tax filing, Education

UNIT – II Communication and Collaboration in the Cyberspace (4 Weeks)

- Electronic Communication: electronic mail, blogs, social media
- Collaborative Digital platforms
- Tools/platforms for online learning
- Collaboration using file sharing, messaging, video conferencing

UNIT – III Towards Safe and Secure Cyberspace (4 Weeks)

- Online security and privacy
- Threats in the digital world: Data breach and Cyber Attacks
- Blockchain Technology
- Security Initiatives by the Govt of India

UNIT – IV Ethical Issues in Digital World (2 Weeks)

- Netiquettes
- Ethics in digital communication
- Ethics in Cyberspace

Practical component (if any) (15 Weeks)

- The course should be conducted in an interactive mode through demonstration, using appropriate tools.
- Conduct workshops on e-services initiated under Digital India.
- Spread digital literacy/awareness amongst the vulnerable groups and marginalised sections of the society like street vendors, domestic help, security guards, senior citizens.
- Students will take up team activities/ projects exploring digital services in the areas such as education, health, planning, farming, security, cyber security, financial inclusion, and justice, e-Kranti.
- Any other Practical/Practice as decided from time to time.

Essential Readings /Online Resources

- Rodney Jones and Christoph Hafner. "Understanding digital literacies: A practical
- Introduction". Routledge Books, 2nd edition, 2021.

- https://www.digitalindia.gov.in
- https://www.digilocker.gov.in
- https://www.cybercrime.gov.in
- https://www.cybersafeindia.in
- https://www.meity.gov.in/cyber-surakshit-bharat-programme

Suggested Readings

- David Sutton. "Cyber security: A practitioner's guide", BCS Learning &
- Development Limited, UK, 2017.
- https://www.mha.gov.in/document/downloads/cyber-safety-handbook

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: EMOTIONAL INTELLIGENCE

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Emotional Intelligence	02	1	0	1	**Pass in Class 12th**	NIL

Learning Objectives
The Learning Objectives of the course are:

- Introduce the concept of emotional intelligence, its models and components.
- Understand the significance of emotional intelligence in self-growth and building effective relationships.
- Identify the measures of emotional intelligence.

Learning outcomes
The Learning Outcomes of the course are

- Self-Awareness, Self-Management, Social Awareness & Relationship Management.
- Discover personal competence and techniques of building emotional intelligence.
- Gain insights into establishing positive relationships.

SYLLABUS OF EMOTIONAL INTELLIGENCE

UNIT – I Fundamentals of Emotional Intelligence (4 Weeks)

- Nature and Significance
- Models of emotional intelligence: Ability, Trait and Mixed
- Building blocks of emotional intelligence: self-awareness, self-management, social awareness, and relationship management

UNIT – II Personal Competence (5 Weeks)

- Self Awareness: Observing and recognizing one's own feelings, Knowing one's strengths and areas of development.
- Self Management: Managing emotions, anxiety, fear, and anger.

UNIT – III Social Competence **(3 Weeks)**

- Social Awareness: Others' Perspectives, Empathy and Compassion
- Relationship Management: Effective communication, Collaboration, Teamwork, and Conflict management

UNIT – IV Emotional Intelligence: Measurement and Development **(3 Weeks)**

- Measures of emotional intelligence
- Strategies to develop and enhance emotional intelligence

Practical component (if any) **(15 Weeks)**

Students will practice self-management techniques to regulate emotions such as
- Mindfulness
- Conditioned relaxation response
- Boundary setting
- Any other

Students will practice various techniques of relationship management such as engaging with:
- Display of empathy
- Effective communication
- Teamwork
- Conflict resolution
- Any other
- If required, students can share their experiences in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Bar-On, R., & Parker, J.D.A.(Eds.) (2000). The handbook of emotional intelligence. San Francisco, California: Jossey Bros.
- Goleman, D. (2005). Emotional Intelligence. New York: Bantam Book.
- Sternberg, R. J. (Ed.). (2000). Handbook of intelligence. Cambridge University Press.

Suggested Readings

- HBR's 10 Must Reads on Emotional Intelligence (2015)

- HBR's 10 Must Reads on Managing Yourself (2011)
- Self Discipline: Life Management, Kindle Edition, Daniel Johnson.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: ETHICS AND CULTURE

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Ethics and Culture	02	1	0	2	Pass in Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- To help students explore ethical and cultural dimensions of their lives.
- To provides a forum for students to pause, revisit their assumptions and beliefs, and become mindful of their thoughts, emotions and actions.
- To give the students an opportunity to express themselves and inquire into their decision making processes.
- To cultivate ethical values and participate in the creation of a society based on acceptance, compassion, and justice.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Explore perspectives on ethics in thoughts, words and actions
- Evolve ethical decision making practises
- Understand the need for an ethical society and culture
- Introspect, become conscious of and assess one's stance in life
- Cultivate empathy, tolerance and compassion
- Apply the values learnt in the course to everyday life

SYLLABUS OF ETHICS AND CULTURE

UNIT – I Introduction - The Basis of Ethics **(3 Weeks)**

- Getting to Know Each Other
- What to Expect from the Course?
- Recognition of Our Common Humanity
- Empathy, Compassion and Justice

UNIT – II The Role of Intelligence, Reason and Emotions (4 Weeks)

- Discernment: What Is The Right Thing To Do?
- The Art of Conflict Resolution
- Destructive and Constructive Emotions
- The Need for Emotional Balance

UNIT – III Cultivating Inner Values- Ethics in the World of Work and Play (4 Weeks)

- Training the Mind: Mindfulness and Kindness
- Meditation
- Discovering your Vocation and Interests
- Self-discipline, Integrity, Commitment, Creativity
- Work-Life Balance

UNIT – IV Striving for a Better World | Outreach Activities (4 Weeks)

- Means and Ends
- Debate and Dialogue
- Culture as Shared Values
- Creating and Sustaining Ethical Cultures: The Role of Philosophy, Religion, Literature, Theatre, Cinema, Music, Media
- Outreach Activities

Practical component (if any) – (15 Weeks)

Unit 1

1. The teacher may ask students to introduce themselves, sharing their regional and cultural roots. They may be asked to reflect on those aspects of their identities that reflect their cultural roots.
2. After a round of initial introduction, the teacher may ask students to list down a set of values that they think they have developed through their parents and grandparents. Are these values unique to their families, regional and/or ethnic backgrounds? Of these, which are the values they would like to sustain and which are the ones they would wish to modify?
3. The teacher may draw upon the values discussed by students in the previous lesson. Using these as the base, the teacher may ask students to think of ethical values that form the basis of their decisions.

4. The teacher may ask students to think of people who they think have lived an 'ethical life'. These may be people who they know from their personal lives or people known for upholding ethical values in the face of adversity.
5. Students are encouraged to identify what common human values are necessary are Realise shared common humanity– the feeling of interconnectedness/interdependence.
6. Class to be divided in small groups to discuss how each would make an effort to cultivate new morals/ethical values for betterment of their local environment.
7. Celebrating 'Sharing and Caring' based on regional diversity can be encouraged.
8. Engage students to do activities of 'being in the shoes of others' (peers, parents, siblings, house help/support or in any local community grappling with problems) to understand the problems empathetically.
9. The students can be asked to make bookmarks/cards to remind them about virtues pertaining to empathy versus sympathy, need versus greed, just versus unjust or compassion versus insensitivity.
10. Compassion is about cultivation of it as a daily value so students can in small groups undertake compassion based activities of looking after animals, birds, needy, elderly, differently abled, non-privileged etc. and share their thoughts in the class.

Unit 2

1. Make the student think of a hard decision they have made. What made it hard? How did you make the decision? How do you assess it retrospectively?
2. Encourage students to think of judgements and decisions based on the dilemmas and challenges they faced? How do they go about making these decisions?
3. The teacher may introduce any well known story and ask the students to discuss the story from the point of view of the different characters.
4. Ask students how willing they are to deal with a conflict when it occurs. What strategies do they adopt to resolve the conflict?
5. The teacher may ask students to prepare posters with captions like "avoidance", "competition", "cooperation" and "adaptation" and then may ask students to identify with one of these styles which according to them best represents their style of dealing with conflict.
6. The students may be asked to discuss different such similar situations that they may have encountered and a discussion may be initiated on how they resolve those conflicts.
7. The students can be asked to write down certain destructive emotions that they are experiencing presently. How would they work to make them constructive? A classroom discussion could follow around this.

8. Ask the students to note down a list of constructive emotions experienced by them recently. Were the constructive emotions less powerful as compared to the destructive ones experienced by them? Discussion in class can follow.
9. How do you (i) express, (ii) handle anger/ disgust/ distress/ fear (any destructive emotion can be taken up). A healthy discussion in the class can take place around this.
10. Students may be asked to practice a simple breathing exercise. They can sit straight with eyes opened or closed in a comfortable position to just observe their breathing. They can repeat this exercise six to eight times and share (if they like) their experience of silence.
11. To identify your interests and develop a meaningful hobby.
12. Have an open conversation in the class about happiness.

Unit 3

1. The students could observe various emotions that bottle-up in their minds and be asked to watch the flow of emotions non-judgmentally.
2. Students may be asked to recall their journey to the college that morning. Do they remember road signs, faces of people they crossed, the roads that they took, the people they interacted with, the sights and smells around them, or anything else?
3. Students could be asked to cultivate the habit of simple greeting as practice of gratitude and celebrate a day of joyful giving.
4. The students can close their eyes for 2-3 minutes and be asked to observe their thoughts, list them and categorise them into 'to be kept' or 'to let go'.
5. The teacher may ask students to close their eyes and imagine a situation in which they are truly happy. Students could wish for the well-being of two students in the same classroom in their meditative state.
6. Students could meditate on who has been their inspiration and the qualities of the person who has inspired them and then express gratitude to the person concerned.
7. The teacher may ask the students to think retrospectively about what they thought they would take up as a vocation when they were younger. How and why their choices were influenced and changed, if at all.
8. The teacher may ask the students to imagine and chart a journey and destination for themselves. They may also talk about the challenges they foresee.
9. The teacher may encourage the students to maintain a daily diary of their scheduling of time or a worklog and see how much time they effectively give to their work. The teacher may help the students identify the distractors and where one may be 'wasting' time and energy. The activity is designed to help students understand the value of effective time utilisation.

10. In this lesson, the teacher may ask the students to draw up a list of team ethics. They may build this based on their experiences of working with each other in groups.
11. The teacher may ask the students to share an incident each where they felt pressurised/ bored to complete some work. How did they deal with their stress and monotony of work?

Unit 4

1. Students will be asked to work in pairs and develop situations that pose ethical dilemmas and how to resolve them.
2. Students may be asked to look at a film or at an advertisement and discuss what they think about the question/s posed in them. The teacher may ask them if they can think of an alternative ethical approach to the problem posed.
3. Students will be asked to think of situations in which they lost their temper. Have they ever felt that in a fit of emotion they said something that they regretted later? If they had paused to listen and then respond, what would the other person have said? How would the outcome of the situation have been different?
4. A debate on any relevant topic may be conducted in the class. After the first round the students may be asked to adopt and argue their opponents point of view. At the end of this exercise the students can have an open discussion on which position finally appealed to them.
5. The teacher may give a short story to the students and ask them to change the ending. They may be asked to observe how characters and their views may have undergone change in the process.
6. There can be a discussion around a topic such as, the idea of corporal punishment, euthanasia etc. Students can be given a sheet of paper and can be asked to write for or against the theme. The idea is to enable them to understand that the positions they have taken vis-a-vis the theme are a result of different value orientations.
7. Popular foods from many parts of India can be discussed. Their origins can be traced to chart a kind of food history.
8. The teacher on the basis of discussions with students can draw from Philosophy, Religion, Literature, Theatre, Cinema, and Media to highlight that the choices people/characters make are grounded in their culture.
9. The students can discuss classical/folk dances that are performed in their respective groups. Details can be drawn based on the number of dancers, music (live or recorded) and costumes. 3. The role of oral traditions and literature in indicating the importance of ethics in our everyday lives can be discussed.

Suggested Activities for Outreach: Social/ Community Engagement and Service

In the weeks that follow, students will be expected to engage in outreach activities that shall enable them to put into practice some of the ethical considerations deliberated upon and imbibed in the previous modules. A list of suggested outreach activities is as follows:

- Adopt a village with the aim of cultural and ethical learning
- Discussing health and hygiene issues in a community
- Tutoring students
- Gender sensitisation
- Working on environmental issues
- Working with Child Care Centres such as Anganwadis and Balwadis
- Working with differently abled students
- Preserving cultural and heritage sites
- Spending time with senior citizens including in a Senior Citizens Home
- Extending care to animals in animal welfare shelters
- Addressing issues relating to Reproductive Health
- Spreading awareness about adolescent health
- Addressing issues relating to mental health
- Health and nutrition awareness
- Swacchata Abhiyaan
- Sensitisation towards disease awareness
- Vriksharopan
- If required, students can share their experiences in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Suggested Readings:

- Aristotle. Nichomachean Ethics. London: Penguin Classics, 2004
- Swami Vivekananda. The Complete Works of Swami Vivekananda. Advaita Ashrama,
2016.
---https://www.ramakrishnavivekananda.info/vivekananda/complete_works.html
- Panch Parmeshwar in English translation as The Holy Panchayat by Munshi Premchand
- The Silas Marner by George Eliot
- We are Seven by Wordsworth
- The Chimney Sweeper by William Blake

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: ETHICS AND VALUES IN ANCIENT INDIAN TRADITIONS

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Ethics and Values in Ancient Indian Traditions	02	1	0	1	Pass in Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the rich cultural traditions relating to discourses on life and its purpose, instilling of values relating to ethical and moral propriety.
- To make students more engaged with the past traditions of the country.
- To introduce students to early epics: Puranic, Buddhist and other traditions.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students will develop an overview of indigenous philosophies.
- Understanding the richness of Indian heritage leading to greater sensitivity.
- Inspiration from history to deal with contemporary issues.
- Appreciate the traditions of diversity, discussions, debates and knowledge transmission.

SYLLABUS OF ETHICS AND VALUES IN ANCIENT INDIAN TRADITIONS

UNIT – I The idea of India and Bharat (5 Weeks)

- 'Jambudvipa'; 'Aryavrata'; 'Bharat' ; India
- Early discourse on moral order- ṛta in Vedic traditions
- Debates in the Upanishads and the Shramanic traditions

UNIT – II State, Society and Dharma **(5 Weeks)**

- Kingship and Society: Dharma, Neeti and Daṇḍa
- Rashtra, Sanskar and making of socio-cultural milieu

UNIT – III The 'Purpose of Life' in Texts **(5 Weeks)**

- Right Conduct': Buddhist, Jaina and Shramanic Traditions
- Puruṣārtha Chatushtaya: Dharma, Artha, Kāma and Mokṣa
- Assimilation and Assertion: Ethical issues in Epics and Puranic **traditions**

Practical component (if any) – **(15 Weeks)**

- Discuss in your locality, in 10-15 households with regard to Ethics and Values in Indian traditions:
  i. Vedic traditions
  ii. Puruṣārtha Chatushtaya
  iii. Buddhist, Jaina and Shramanic Traditions
  iv. Jambudvipa; Aryavrata; Bharat; India
- Students are required to explore e-resources available with University of Delhi and academic institutions.
- Students are required to watch documentaries and films on the subject-related topics.
- If required, students can share their experiences in the form of a Project Report.
- Students may share their experiences in the form of audio-visual presentations of 15-30 minutes.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Buietenen, J.A.B. Van, The Bhagwadgita in the Mahabharata: Text and Translation, Chicago: Chicago University Press, 1981. Bhagwadgita by Geeta Press Gorakhpur.
- Bhasham, A.L, Wonder that was India: A Survey of the Culture of the Indian Subcontinent Before the Coming of the Muslims. London, Sidgwick and Jackson, 1954
- Dasgupta, S. N. History of Indian Philosophy. Cambridge University Press, 1923, Vol. I-II.
- Hiltebeital, Alf. Rethinking the Mahabharata: A Reader's Guide to the Education of the Dharma King. Chicago: Chicago University Press, 2001.
- Kane, P.V. History of Dharmashastra (Ancient and Medieval Religious and Civil Law), vol. II, parts 1-2; vol. III 3rd ed. Pune: Bhandarkar Oriental Research Institute,[1941, 1946].

- Olivelle, Patric. King, Governance, and Law in Ancient India: Kautilya's Arthashastra, Oxford: Oxford University Press, 2013.
- Sharma, Arvind. 'On Hindu, Hindustan, Hinduism and Hindutva'. Numen, 49(1), 2002, p. 1-36.

Suggested readings

- Olivelle, Patric. (text and trans.) *Manu's Code of Law: A Critical Edition and Translation of the Manava-Dharmashastra.* New Delhi: Oxford University Press, 2006.
- Rocher, Ludo. 'The Concept of Boundaries in Classical India', in Peter Gaefkke and David Utz (eds.), *The Countries of South Asia: Boundries, Extensions, and Interrelations.*
- Philadelphia: University of Pennsylvania, Department of South Asia Regional Studies (Proceedings of The South Asia Seminar, III, 1982-1983), 1988, p. 3-10
- Sukthankar, V.S., S.K. Belvalkar, and P.L. Vaidya(ed.). *The Mahabharata.* Poona: Bhandarkar Oriental Research Institute, 1933-66.
- Tripathi, Radhavallabh, ed. *India's Intellectual Traditions: A Revealed Through Sanskrit Sources*. New Delhi: Sahitya Akademi, 2016.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: FINANCIAL LITERACY

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Financial Literacy	02	1	0	1	Pass in Class 12^{th}	NIL

Learning Objectives

The Learning Objectives of this course are as follows:
- Familiarity with different aspects of financial literacy such as savings, investment, taxation, and insurance
- Understand the relevance and process of financial planning
- Promote financial well-being

Learning outcomes

The Learning Outcomes of this course are as follows:
- Develop proficiency for personal and family financial planning
- Apply the concept of investment planning
- Ability to analyse banking and insurance products
- Personal tax planning

SYLLABUS OF FINANCIAL LITERACY

UNIT – I Financial Planning and Financial Products (3 Weeks)
- Introduction to Saving
- Time value of money
- Management of spending and financial discipline

UNIT – II Banking and Digital Payment (4 Weeks)

- Banking products and services

- Digitisation of financial transactions: Debit Cards (ATM Cards) and Credit Cards., Net banking and UPI, digital wallets
- Security and precautions against Ponzi schemes and online frauds

UNIT – III Investment Planning and Management (4 Weeks)

- Investment opportunity and financial products
- Insurance Planning: Life and non-life including medical insurance schemes

UNIT – IV Personal Tax (4 Weeks)

- Introduction to basic Tax Structure in India for personal taxation
- Aspects of Personal tax planning
- Exemptions and deductions for individuals
- e-filing

Note: Some of the theoretical concepts would be dealt with during practice hours.

Practical component (if any) – (15 Weeks)

- Regular class activities to enhance students' understanding of topics and the application of concepts. The case study method may be followed as a teaching pedagogy.
- Numerical questions pertaining to each unit wherever applicable should be practiced.
- For the second unit, students may be assigned a project wherein they can log on to the website of various banks and conduct an in-depth analysis and comparison of various financial products offered.
- For Unit III, a Project related to building a dummy portfolio of stocks and tracking their returns may be given.
- An investment budget may be given to the students to select investment options that maximize the return and minimize the tax implications.
- For the last unit, students may also file a dummy IT return to get hands-on experience with e-filing.
- Students may conduct a financial literacy survey among at least 25 respondents to measure the level of financial literacy and share the findings in the awareness in the form of a report.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Introduction to Financial Planning (4th Edition 2017) – Indian Institute of Banking

& Finance.

- Sinha, Madhu. Financial Planning: A Ready Reckoner July 2017, McGraw Hill.

Suggested readings

- Halan, Monika, Lets Talk Money: You've Worked Hard for It, Now Make It Work for You, July 2018 Harper Business.
- Pandit, Amar The Only Financial Planning Book that You Will Ever Need , Network 18 Publications Ltd.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: FIT INDIA

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Fit India	02	0	0	2	Pass in Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:
- Encourage physical activity through engaging the students in sports and yoga.
- Understand the importance of a balanced diet .
- Build skills for self-discipline, self-confidence, cooperation and teamwork.
- Promote fitness as a joyful activity

Learning outcomes

The Learning Outcomes of this course are as follows:
- Adopting a healthy lifestyle.
- Knowledge of nutrition, diet and psycho-physiological aspects of fitness.
- Develop Self-esteem, Self-confidence, Self-discipline and team spirit as indicators of fitness.

SYLLABUS OF FIT INDIA

ONLY PRACTICAL

Note: Concepts are to be taken up during the practical/practice hours.

Practical component (if any) – (15 Weeks)

UNIT – I Participation in Physical Activity (4 Weeks)

- Fit India Protocol

- Physical Activity, Health and Fitness
- Indicators of Fitness

Practical/Practice

- Aerobic Work Out / Physical Activity (Walking)
- Yoga – Asanas (Lying, Sitting and Standing positions) and Pranayama
- Cardiovascular Testing by 12min/9 min Cooper Run/Walk test

UNIT – II Health Related Fitness and their Components (4 Weeks)

- Muscular Strength and Endurance
- Body Composition and Flexibility

Practical/Practice

- Flexibility Training: Back Saver Sit and Reach test
- Muscular Strength Training: Curl Ups / Standing Broad Jump/ Vertical Jump/ Plyometric
- Endurance Training: 1 Mile RockPort Test or 12 /9 minute Cooper run/walk test.
- Ideal Body Weight, Body Mass Index (BMI), Waist-Hip Ratio, Waist-Height Ratio (Data of at least 10 persons to be collected)

UNIT – III Nutrition and Fitness (4 Weeks)

- Healthy Eating Plate
- Balanced Diet
- Caloric Content of Food

Practical/Practice

- Preparing Daily Diet and Calorie Chart
- Aerobic Work Out / Physical Activity (Walking)
- Assessment of Physical Activity with the Calorie intake.
- Asanas for digestive system excretory system

UNIT – IV Sports Physiology and Psychology (3 Weeks)

- Depression, Anxiety and Stress Scale (DASS)
- Rosenberg Self Esteem Scale

Practical/Practice

- Skills learning and Participation in sports
- Group Games / Relays/ Minor Games
- Meditative Asanas and Pranayama
- Fitness component testing (as per Fit India Protocol and Norms) and Analysis of Results
- Data of at least 10 persons to be collected on DASS and self-esteem scale

Essential/recommended readings

- Fit India Website: https://fitindia.gov.in
- Wener W.K. Hoeger, Sharon
- A. Hoeger - Fitness and Wellness-Cengage Learning (2014).

Suggested readings

- Charles B. Corbin, Gregory J Welk, William R Corbin, Karen A Welk - Concepts of Fitness And Wellness_ A Comprehensive Lifestyle Approach-McGraw-Hill (2015)
- W.Larry Kenney, Jack H. Wilmore, Devid L.Costil(2015). Physiology of Sports and Exercise, Second Edition. USA. Human Kinetics.
- Websites of International Sports Federations
- Website of Ministry of Youth Affairs and Sports

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: GANDHI AND EDUCATION

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Gandhi and Education	02	1	0	1	**Pass in Class 12th**	NIL

Learning Objectives:
The Learning Objectives of the course are:

- Seek inspiration from Gandhi's thoughts on education.
- Analyse Gandhian education philosophy for moral and character development.
- Understand Gandhi's Idea on Self-reliant education (Swavalambi Shiksha)
- Relate Gandhi's educational thoughts to NEP 2020

Learning Outcomes
The Learning Outcomes of the course are:

- Value Gandhian perspective on education
- Appreciate the significance of education in Indian languages
- Evaluate the application of Gandhian thoughts in NEP 2020
- Realise the principles of NEP 2020 in vocational and skill oriented education.

SYLLABUS OF GANDHI AND EDUCATION

UNIT – I : Gandhi's Philosophy and education (Weeks: 5)

- Gandhi's Philosophy on education
- Education for character building and moral development
- Education relating to health, hygiene, heritage, and handicraft

UNIT – II Gandhi's Experiment in Education **(Weeks: 5)**

- Gandhi's educational ideas on use of Indian Language as a medium of Instruction, TextBook and Teacher.
- Gandhi's educational thought on Elementary and Adult Education.
- Gandhi's vision on Higher Education

UNIT – III : Gandhi's Educational Thought on Skill and Vocational Education **(Weeks: 5)**

- Rural development through Skill and Local Need Based education
- Skill education in NEP 2020 and Gandhi
- Gandhi's Idea on Self-reliance (Swavalambi Shiksha) and its reflection in contemporary educational policy.

Practical component (if any) - **(15 Weeks)**

- Regular visits to Gandhi Museum and library to gain insight on Gandhi
- Excursion to Gandhi Ashrams located in different places like Sewagram, Wardha, Sabarmati, Ahmedabad etc.
- Workshops/projects in collaboration with Gandhi Bhawan, Gandhi Smriti and Darshan, Gandhi Peace Center. Ashrams based on innovation in village & cottage industry, Khadi, handicrafts, organic farming etc.
- Adoption of one place for Swachhta Mission or Skill Education
- If required, students can share their experiences in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

• महात्मा गांधी. **(2014).** बुनियादी शिक्षा. वाराणसी : सर्व सेवा संघ प्रकाशन.

• गांधी, मो. क. **(2010).** मेरे सपनों का भारत. अहमदाबाद : नवजीवन प्रकाशन मंदि र.

नवजीवन प्रकाशन मंदि र. **(1960).** शरीर-श्रम. अहमदाबाद: मो. क. गांधी. **pp– 196-231**

• प्रभु, आर. के. व राव, यू. आर. **(1994).** महात्मा गांधी के वि चार. इंडि या: नेशनल बुक ट्रस्ट.

• Anand T. Hingorani, ed.] Gandhi, M.K. Our Language Problem (Bombay:

• Bharatiya Vidya Bhavan,), pp. 53-55

• TOWARDS NEW EDUCATION written by M. K. Gandhi Edited by Bharatan Kumarappa

Suggestive readings

• गांधी, मो.क. **(2012).** सत्य के प्रयोग अथवा आत्मकथा (त्रिवेदी, काशीनाथ,अनुवादक) अहमदाबाद: नवजीवन प्रकाशन मंदि र.

• गांधी, मो.क. **(2012).** हिद स्वराज (नणावती, अमृतलाल ठाकोरदास, अनुवादक). अहमदाबाद.नवजीवन प्रकाशन मंदिर

• Coomaraswamy, Anand K . (1910). Art and Swadeshi . Munshi Ram Manoharalal. Delhi

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: ECOLOGY AND LITERATURE

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Ecology and Literature	02	1	0	1	Pass in Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- To raise awareness among students towards the urgent predicament of Environmental and Ecological crisis and the need for reducing our carbon footprint upon fast depleting, ravaged ecological reserves.
- To develop a heightened ecological consciousness among students, leading to more responsible ecological behavior.
- To view environmental concerns as raised through plays, stories and poems.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The course will highlight the urgency of environmental crisis, making Students conscious and aware of the role each one of us plays.
- Students will be trained into environmental sensitivity and responsible Ecological behavior.
- Students will be encouraged to respond to incidents of habitat destruction deforestation, etc. and realize the need for our urgent intervention

SYLLABUS OF ECOLOGY AND LITERATURE

UNIT – I Negotiating environmental issues creatively (5 Weeks)

- William Wordsworth: 'In April beneath the scented thorn'
- Rabindranath Tagore: 'The Waterfall'
- Gieve Patel: 'On Killing a Tree'

UNIT – II Ecocritical literary representations (5 Weeks)

- Mary Oliver: 'Sleeping in the Forest'
- 2.AK Ramanujan: 'A Flowering Tree'
- 3.Mamang Dai: 'Small Towns and the River'

UNIT – III Empathetic exploration and imaginative re-enactments (5 Weeks)

- Amitav Ghosh's 'Part I: Stories' from The Great Derangement: Climate Change and the Unthinkable.
- ThangjamIbopishak: 'Volcano, You cannot erupt' from Dancing Earth: An Anthology of Poetry from North-East India
- ThangjamIbopishak: 'Dali, Hussain, or Odour of Dream, Colour of Wind' from Dancing Earth: An Anthology of Poetry from North-East India

Practical component (if any) – (15 Weeks)

- Students would undertake field visits to a school or a slum in the neighborhood or the play area of residential complexes to share, narrate stories, poems and articulate the ideas engaged with in the classroom lectures.
- They shall apply imaginative and creative ways of presenting socially responsible ecological behavior through re-tellings of the texts they have studied in the class.
- Creative re-enactment of key ideas studied by students in the form of a play, to be done individually and/or in a group to create awareness regarding environmental consciousness.
- They can also collectively organize a tree plantation drive in and around the college campus and adopt a sapling each in the college premises and in their neighborhood to take care of.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Akhter, Tawhida, and Ahmad Bhat, Tariq. Literature and Nature. United Kingdom, Cambridge Scholars Publishing, 2022.
- Shiva, Vandana. 'Development, Ecology and Women', Staying Alive: Women Ecology and Development. India: Zed Books, 1988. pp 1-14
- Carl, Safina. Prologue & Chapter 1, Beyond Words: What animals think and feel. Souvenir Press, 2015.
- Garrard, Greg. Ecocriticism. United Kingdom: Taylor & Francis, 2011.
- Wohlleben, Peter. The Hidden Life of Trees: What They Feel, How They Communicate—Discoveries from a Secret World. India: Penguin Books Limited, 2016.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: NATIONAL CADET CORPS- I

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
National Cadet Corps -I	02	1	0	1	Pass in Class 12th	Enrolled as NCC Cadet

Learning Objectives

The Learning Objectives of this course are as follows:

- Provide knowledge about the history of NCC, its organization, and incentives of NCC for their career prospects.
- Inculcate spirit of duty and conduct in NCC cadets.
- Provide understanding about different NCC camps and their conducts.
- Provide understanding about the concept of national integration and its importance.
- Provide understanding about the concept of self-awareness and emotional intelligence.
- Provide understanding about the concept of critical & creative thinking.
- Provide understanding about the process of decision making & problem solving.
- Provide understanding about the concept of team and its functioning.
- Provide understanding about the concept and importance of Social service.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Critically think and analyse.
- Understand the basic concept of NCC.
- Respect the diversity of different Indian culture.
- Practice togetherness, teamwork and empathy in all walks of their life.
- Do their own self-analysis and will work out to overcome their weakness for Better performance in all aspects of life.

SYLLABUS OF NATIONAL CADET CORPS-I

UNIT – I NCC General **(4 Weeks)**

- Aims, Objectives and Organization of NCC
- Incentives for NCC Cadets
- Duties of NCC Cadets
- NCC Camps: Types and Conduct

UNIT – II National Integration **(4 Weeks)**

- National Integration: Importance and Necessity
- Factors affecting National Integration
- Unity in Diversity
- Threats to National Security

UNIT – III Personality Development **(5 Weeks)**

- Factors
- Self-Awareness
- Empathy
- Critical and Creative Thinking
- Decision Making and Problem Solving

UNIT – IV Social Service and Community Development **(2 Weeks)**

- Basics of Social Service
- Rural Development Programmes
- NGO's
- Contribution of Youth

Practical component (if any) - **(15 Weeks)**

- Drill
- Field Craft & Battle Craft
- Map Reading
- Weapon Training
- Social Service & Community Development
- Any other Practical/Practice as decided from time to time

Suggested readings

- DGNCC Cadet's Hand Book - Common Subjects -All Wings (in English)
- DGNCC Cadet's Hand Book - Common Subjects -All Wings (in Hindi)
- DGNCC Cadet's Hand Book – Specialised Subjects –Army, Navy and Air Wing

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

VAC 1: PANCHKOSHA: HOLISTIC DEVELOPMENT OF PERSONALITY

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Panchkosha: Holistic Development of Personality	02	1	0	1	Pass in Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce Five Koshas – five levels of mind-body complex – Annamaya, Pranayama, Manomaya, Vigyanamaya and Anandamaya Kosha; for a holistic development of personality.
- To generate awareness about physical and mental wellbeing through the Indian concept of Panchkosha.
- To develop a positive attitude towards self, family and society amongst students.
- To guide students build personalities based on the understanding of Panchkosha.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Enhanced physical and mental health.
- Coping with peer pressures and stress.
- Improved concentration leading to better overall performance.
- Manage life situations through a balanced and mature approach.

SYLLABUS OF HOLISTIC DEVELOPMENT OF PERSONALITY

UNIT – I Elements of Personality **(4 Weeks)**

- PanchaKosha: Introduction
- Five aspects of Human Personality: Annamaya Kosha (Physical

body), Pranamaya Kosha (Vital life force energy), Manomaya Kosha (Psychological wellness), Vijnanamaya Kosha (Intellect), Anandamaya Kosha (Happiness and Blissfulness)

- Health: Mental and Physical

UNIT – II *Annamaya Kosha* and *Pranamaya Kosha* **(4 Weeks)**

- Human Body and Pancha Karmendriyas
- Annamaya Kosha: Balanced diet and exercise for healthy body
- Pranamaya Kosha: Development of life force, Pranayam
- Charucharya: Social Etiquettes

UNIT – III *Manomaya Kosha* and *Vijnanamaya Kosha* **(4 Weeks)**

- Antahkarana and its functions
- Pancha Gyanendriyas
- Manomaya Kosha : Controlling the Mana (mind)
- Vijnanamaya Kosha: Ability of discretion and decision making

UNIT – IV *Anandamaya Kosha* and Beyond **(3 Weeks)**

- Anandamaya Kosha: Experience of happiness and bliss
- Self-realisation, Nature of Consciousness: Sat-Chit-Ananda

Practical component (if any) – **(15 Weeks)**

- Recitation of select verses from Taitiriyopansid
- Asana
- Pranayama
- Meditation
- Visit to a Yog shivir or meditation centres
- Students are required to watch documentaries and films on the subject-related topics.
- If required, students can share their experiences in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Essential Readings

- पंचकोश वि वेक,स्वामी परमहंस योगनान्द, **https://ndl.iitkgp.ac.in/**पर उपलब्ध
- वि वेक चूड़ामणि , आदि शंकराचार्य द्वारा लि खि त, अरवि न्द आनंद द्वारा अनुदि त,

चौखम्भा प्रकाशन, वाराणसी, **2015**

- Vivek Chudamani, Adi Shankaracharya, Swami Turiyananda (Sanskrit and English), Sri Ramakrishna Math, Mylapore, 2019
- सभी के लि ए योग,बी.के.एस. आयंगार, प्रभात प्रकाशन, **2018**
- Yoga The Path to Holistic Health: The Definitive Step-by-step Guide, B.K.S. Iyengar, Dorling Kingsley, London, 2021
- The Sacred Science of Yoga & The Five Koshas, Christopher Sartain, CreateSpace Independent Pub, 2015

Suggested Readings

- PanchaKosha: The five sheaths of the human being, Swami Nishchalanand, Kindle edition.
- Upanisadvakya Mahakosa. (An Upanishadic Concordance, taken from 239 Upanishads, G. S. Sadhale (Compiled by). Chowkhamba Vidyabhawan, Varanasi, 2014
- The Pentagon of Creation: As Expounded in the Upani

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: READING INDIAN FICTION IN ENGLISH

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Reading Indian Fiction in English	02	1	0	1	Pass in Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:
- Acquaint students with Indian Fiction in English.
- Familiarise students with Indian ethos and values through Indian fiction.
- Analyze novels critically and in the context of their own lived situations.

Learning outcomes

The Learning Outcomes of this course are as follows:
- Understanding of Indian ethos and values through Indian fiction.
- Develop creative thinking through reading of fiction..
- Realise the potential of fiction in bringing out social and cultural change

SYLLABUS OF READING INDIAN FICTION IN ENGLISH

UNIT – I **(2 Weeks)**

- How to Read a Novel
- Novel as Reflection of Society

UNIT – II **(7 Weeks)**

- Bankim Chandra Chatterjee: Anandamath (English translation by Sri Aurobindo and Barindra K Ghosh)

Points of Discussion:

- Patriotism and Nationalism
- The song Bande Mataram
- Elements of History and Romance
- Issues of Gender
- Natural calamity
- Genre of Text and Feature Film

UNIT – III **(6 Weeks)**

- Chaman Nahal: Azadi. Houghton Mifflin publication, 1975.

Points of Discussion:

- The Story of Partition
- Violence and Trauma
- Autobiographical voices in the novel
- Elements of history, politics and art
- Personal and Political

Practical component (if any) – **(15 Weeks)**

- Students may be asked to do a dramatic recitation of selected parts of a novel.
- Students may be asked to organize the major events of the plot of a novel through different methods: graphically, making a plot outline or sketching a storyboard.
- Students may be asked to classify each instance of figurative language (simile, metaphor, etc.) and explain its effect on that section of the text.
- Students may share their understanding of any particular aspect of the novels through a brief write up.
- Discuss the portrayal of any major characters of the novel with reference to the central theme of the text.
- Think about and discuss Indian fiction in relation to cultural and critical contexts.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Bankim Chandra Chatterjee: Anandamath (English translation by Sri Aurobindo and Barindra K. Ghosh)

- Chaman Nahal: Azadi. Houghton Mifflin publication, 1975
- E. M. Forster: Aspects of the Novel

Suggested Reading:

- Srinivasa Iyengar, K. R. Indian Writing in English. India, Sterling Publishers, 1987.
- 2. Naik, M. K. A History of Indian English Literature. India, SahityaAkademi, 1982.
- 3. Nayar, Pramod K. The Indian Graphic Novel: Nation, History and Critique. India, Taylor & Francis, 2016.
- 4. Gopal, Priyamvada. The Indian English Novel: Nation, History, and Narration. United Kingdom, Oxford University Press, 2009.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: SCIENCE AND SOCIETY

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Science and Society	02	1	0	1	Pass in Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are:

- The primary objective of this course is to instil in students an appreciation for science and a scientific outlook and temper.
- The course further aims to increase awareness about fundamental scientific concepts that play an important role in our daily life using various examples and case studies.
- Pedagogy in this course should largely rely on learning by enquiry, observations, experimentation and group discussions using case studies/examples.
- Efforts should be made to instil an interest in students for science. Students should be encouraged to understand and appreciate scientific concepts and their applications rather than solely memorizing factual information.

Learning outcomes

The Learning Outcomes of this course are:

- This paper is interdisciplinary in nature and would provide students with basic exposure to scientific methods, technologies and developments that have played a significant role in the evolution of human society from ancient to modern times.
- 2. Students would also be made aware of the scientific rationale of technological developments that would enable them to make informed decisions about their potential impact on society.

SYLLABUS OF SCIENCE AND SOCIETY

UNIT – I Science and Technology – from Ancient to Modern Times (10 Weeks)

In this section, students should also be made aware about the contributions of Indian scientists since ancient times and the contributions of women in science.

Subtopics

- Philosophy of science, the scientific method, importance of observation, questions and experimental design, rational thinking, myths vs. Facts

- Science, Technology and Traditional Practices: Suggestive areas include: Water harvesting structures and Practices; Construction, architecture and design – use of natural environment-friendly designs and materials; Agriculture including domestication of plants and animals.
In this section, students should also be made aware about the contributions of Indian scientists since ancient times and the contributions of women in science.

- Science and Technology in Modern Times: Suggestive areas include: PublicHealth:Nutrition,Hygiene,PhysicalandMentalHealth,VaccinesandAntibiotics,Anti-microbial resistance; Food Security: Green Revolution, White Revolution; IT Revolution, E-Governance; Clean Energy, Renewable Energy; Space Science and Exploration; Evolution, Ecology and Environment

UNIT II: Scientific Principles, and Concepts in Daily Life (5 Weeks)

Unit Description:

This section aims to encourage appreciation of the scientific method through observation, experimentation, analysis and discussions. Students are required to participate in activities and experiments. A suggestive list is given below:

Subtopics:

Suggested Activities:

- Observing and documenting flora and fauna of College campus/city.
- Visits to science laboratories in the College or neighbouring College/Institute.
- Visits to science museums, planetarium.
- Visits to biodiversity parks and nature walks.
- Participation in a citizen science project/initiative.

Suggested Experiments (minimum any four):

- Measuring the height of the college building using a stick.
- Measuring the curvature of earth, using distance and shadow length.
- Isolation of DNA (DNA Spooling)
- Observing transpiration and photosynthesis in plants
- The blood typing game (online)
- Are fruit juices, soap, carbonated drinks acidic or alkaline? (using pH strips or developing your own Litmus Test)
- Do plants learn and remember?
- Experiments on how migratory birds find their way. (Online)
- How can a mosquito sit on a water surface or a blade float on water?
- How does a submarine dip or rise in the ocean?
- How and why does the path of the sun in the sky change with the seasons?
- Identification of celestial objects with the naked eye
- Types of clouds
- Science of musical sounds
- Science of splitting of colours from white light: rainbow, CD-rom, prism, oil films.
- Lenses, mirrors and the human eye

Practical/ Practice Component : **Please Refer to Unit II.**

Essential/recommended readings

- Basu and Khan (2001). Marching Ahead with Science. National Book Trust
- Gopalakrishnan (2006). Inventors who Revolutionised our Lives. National Book Trust
- Yash Pal and Rahul Pal (2013) Random Curiosity. National Book Trust
- Hakob Barseghyan, Nicholas Overgaard, and Gregory Rupik (****) Introduction to History and Philosophy of Science
- John Avery (2005). Science and Society, 2nd Edition, H.C. Ørsted Institute, Copenhagen.
- Dharampal (2000). Indian Science and Technology in the Eighteenth Century, OIP.

Suggested Readings:

Section 1. Science and Technology – from Ancient to Modern Times:
Philosophy of science:
https://blogs.scientificamerican.com/doing-good-science/what-is-philosophy-of-scienceand- should-scientists-care/
http://abyss.uoregon.edu/~js/21st_century_science/lectures/lec01.html
https://wps.ablongman.com/wps/media/objects/1449/1483820/18_2.pdf

Myths vs. facts:

https://www.sciencelearn.org.nz/resources/415-myths-of-the-nature-of-science
History of technology:

https://www.visualcapitalist.com/history-of-technology-earliest-tools-modernage/

Water harvesting:

https://worldwaterreserve.com/introduction-to-rainwater-harvesting/
Public Health :

https://www.ajpmonline.org/article/S0749-3797(11)00514-9/fulltext
https://study.com/academy/lesson/public-health-vs-medicinedifferences-similarities.html
https://www.deepc.org.in/video-tutorials/public-health
Food Security:

https://www.concern.net/news/what-food-security
Energy:
https://www.nrdc.org/stories/renewable-energy-clean-facts

Space Science:

https://www.isro.gov.in/spacecraft/space-science-exploration
https://www.isro.gov.in/pslv-c11-chandrayaan-1
https://www.isro.gov.in/chandrayaan2-home-0
https://www.britannica.com/science/space-exploration

Contribution of Indian Scientists & Women Scientists:

https://www.tifr.res.in/~outreach/biographies/scientists.pdf
https://indiabioscience.org/media/articles/ISTI.pdf
https://www.thebetterindia.com/63119/ancient-india-science technology/
https://ncsm.gov.in/indian-women-in-science-technology/

Evolution:

https://www.livescience.com/474-controversy-evolution-works.html
https://www.ibiology.org/evolution/origin-of-life/
Climate change and global warming
https://letstalkscience.ca/educational-resources/backgrounders/introductionclimate-change

Biodiversity

https://india.mongabay.com/2020/09/nature-in-peril-as-biodiversity-lossesmount-alarmingly-states-the-living-planet-report/

Genomics and Modern Medicine

https://www.nationalgeographic.com/science/article/partner-contentgenomics-health-care
https://www.mja.com.au/journal/2014/201/1/impact-genomics-future-medicine-and-health
https://www.nature.com/scitable/topicpage/pharmacogenomics-andpersonalized-medicine-643/

Genetically modified engineered crops

https://www.nature.com/scitable/topicpage/genetically-modified-organismsgmos-transgenic-crops-and-732/
https://factly.in/explainer-what-is-the-status-of-gm-crops-in-india/
https://www.fda.gov/food/agricultural-biotechnology/how-gmo-crops-impactour-world

Artificial Intelligence and Robotics

https://www.ohio.edu/mechanical-faculty/williams/html/PDF/IntroRob.pdf
https://nptel.ac.in/content/storage2/courses/106105078/pdf/Lesson%2001.pdf

Big Data Analytics

https://www.researchgate.net/publication/328783489_Big_Data_and_Big_Data_Analytics_Concepts_Types_and_Technologies

Section 2. Scientific Principles, and Concepts in Daily Life Measuring buildings, earth curvature:

https://www.youtube.com/watch?v=hrwL3u2Z4Kg
https://www.youtube.com/watch?v=khRMzxONpLg
https://www.youtube.com/watch?v=YaPa4esJJx4

Isolation of DNA

https://melscience.com/US-en/articles/home-dnaextraction/?irclickid=2hh2pqRY8xyLTbawUx0Mo3ENUkBwlX3pGQDJSc0&utm_source=impact&irpid=2201352&irmpname=Science%20Journal%20for%20Kids&irgwc=1

Transpiration & Photosynthesis

https://www.youtube.com/watch?v=JQvdXX7hGqI
https://www.youtube.com/watch?v=U4rzLhz4HHk
https://www.youtube.com/watch?v=pFaBpVoQD4E

Online game on blood typing

https://educationalgames.nobelprize.org/educational/medicine/bloodtypingame/gamev3/1.html

Determination of pH
https://www.youtube.com/watch?v=BEz6t_e6gpc

Plant behaviour
https://youtu.be/KyoeCFTIXKk
https://youtu.be/gBGt5OeAQFk

Migratory Birds

https://www.scienceabc.com/nature/how-migrating-birds-geese-navigate-long-distance-earthmagnetic-field.html

VAC 1: SOCIAL AND EMOTIONAL LEARNING

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Social and Emotional Learning	02	1	0	1	Pass in Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:
- This course aims to develop social and emotional awareness in students and initiate them towards better personal and social well-being.
- To create an awareness towards self, others, the environment and their harmonious coexistence.

Learning outcomes

The Learning Outcomes of this course are as follows:
- Students will be able to become aware of oneself and the society.
- Make informed lifestyle choices and extend the self in the joy of giving.
- Develop empathy, compassion, connect with nature and evolve emotionally to create a more harmonious society.
- Cultivate sensitivity towards discriminatory practices and explore possible solutions.

SYLLABUS OF SOCIAL AND EMOTIONAL LEARNING

UNIT – I Introduction - Self-Awareness and Happiness (3 Weeks)
- Getting to Know Each Other
- What to Expect from this Course?
- Getting to Know Oneself
- What Makes One Happy/ Unhappy? Outer vs Inner Sources of Happiness, Joy of Giving

UNIT – II Social Relationships | Mindfulness (4 Weeks)

- Sharing vs Power: Peers, Family and Society
- Going Beyond Power Relationships Through Open Conversation
- The Value of Silence and Reflection
- Practice of Mindfulness

UNIT – III Identity, Self-Image, Status, Self-Worth- Digital Identity (4 Weeks)

- Identity Construction and Expression: Individual and Collective
- Accepting and Valuing Oneself
- Understanding the Gendered World
- Identifying and transcending stereotypes
- Identity Formation and Validation in the Digital World
- Discrimination and its Forms

UNIT – IV Lifestyle Choices | Stress and Its Management (4 Weeks)

- What Choices Does One Get To Make?
- Is Choice influenced? Relationships, Career Choices
- Career Pressures, Examinations
- Dealing with Disappointment, Coping Skills, Health and Fitness
- Connect With Nature: Sensitivity Towards Other Sentient Beings

Practical component (if any) – (15 Weeks)

Unit 1

Getting to Know Each Other

In this lecture, the teacher will facilitate social engagement and personal reflection through a round of introductions. This also provides an opportunity for the teacher and students to recognise the deeper meanings that lie underneath routine exercises of introduction. For example, the adjectives that people use to describe themselves are indicative of the image that they wish others to hold of them. But do they hold the same image about themselves?

Teachers may begin the class by introducing themselves. Any introductory exercise that serves as an ice breaker and creates the classroom space as one of vibrant and open discussions, may be used. Teachers should try and ensure participation of all students in this exercise.

Activities

1. Who is in your circle?

Students may be asked to draw three concentric circles on their notebooks. The central circle is for the topic, the second for 'Love', and third for 'Like'. The space outside the circles is for 'Don't like'. The class decides on one topic, such as food, movies, web series, books, music, interests, etc. Each topic is taken up in turn and students are asked to write what they love, like, and don't like in the circles and share it with others. The exercise helps students to identify with their peers in commonalities and differences. The teacher may use prompts such as 'Why do you like this show?', 'Why do you dislike this food?' etc.

2. I am...

Students are asked to complete the sentences. The teacher may take turns and ask random students to answer it or the teacher may write these on the board and ask every student to write the answer in their notebooks. Some suggested prompt sentences are:

I am excited about.....

I wish I could.....

I am wondering.....

I am feeling anxious about....

Students can choose to share some of the answers with the class. The purpose of the exercise is to bring most students to speak in class and share their honest feelings and thoughts.

3. Introduce Yourself. Know Yourself

In this exercise, the teacher asks all students to take turns to introduce themselves. It is likely that most students will talk about their names, previous qualifications and hobbies. At the end of the introductions, the teacher can identify

commonalities such as previous courses undertaken, regional identities, age, or similar common factors. The teacher may then use the following prompts to facilitate discussion:

Do these define you? Are you something more? Would you like to change any of these qualifiers?

Is there something about you that you would like to share with us? Do you ever wonder about your identity/ identities?

What to Expect from this Course?

In this class, the focus is on understanding the relevance of the course and providing a course overview. Students will be able to explore the various dimensions of their lives and develop insights about themselves and their relationships. By discussing the outline of the course and the suggested activities, the teacher shall bring to the fore the exploratory journey that the students will embark upon. The students' questions relating to the course contents will also be addressed in this lecture.

Activities

In this class, the teacher may undertake an overview of the course, discussing each week's themes briefly. The nature of assignments and evaluation can also be detailed out. The teacher may hold a discussion with students on the following:

1. Why is social and emotional learning important?
2. What can the teacher do to make the classroom a more welcoming and open space for you?
3. What would be some of the activities that you would like to undertake during the course? Such

as watching movies, reading books, maintaining a reflective journal, engagement in the field, mindfulness exercises, etc.

Self Awareness and Happiness

The aim of this module is to help students develop awareness about themselves – who they are, what their strengths and limitations are, and how they can develop themselves. This will help them to learn interlinkages and distinctions between thoughts, emotions and behaviours. This module will make them aware of the differences between happiness and pleasure and help them ponder on sources of happiness.

Self Awareness

Self-awareness is the experience and understanding of one's own personality – how an individual understands his own feelings, motives, desires, and behaviour, and the triggers for the same. Hence, self-awareness can be considered to be vital for personal development. Students would thereby become more grounded and confident. This lesson will focus on the student's intrapersonal and interpersonal awareness through discussions and activities.

Activities

1. Students are asked to make a timeline of important events in their life and how each one affected them at that time. Do they see it differently today?
2. SWOT Analysis can be done by each student – Strengths, Weaknesses, Opportunities and Threats.
3. How do they envision their ideal person – What does your ideal person look like? What characteristics do they possess? Identify the gap. How do they plan to fill/reduce the gap?

Happiness

The term 'happiness' includes pleasant and positive emotions which can range from deep satisfaction and contentment to pleasure and excitement. The focus of this session would be to discuss techniques to develop the long-lasting feelings of contentment rather than momentary and short-lived emotions of excitement and pleasure. This will encourage and foster feelings of wellbeing and life satisfaction. The teacher will use activities in order to inculcate the ways of developing and sustaining happiness.

Activities

Writing a gratitude Journal – include in it what you are grateful for. Mindfulness exercises and developing a mindful way of doing things.

"As one door closes, another door opens". A discussion based on the three opportunities that they think they lost and consider what it was they gained in the process.

Unit 2

Social Relationships

In this module, students will be asked to turn their gaze towards the society in which they are located and where they form social relations. They will be asked to introspect and understand the ways in which they connect with their immediate and extended social surroundings. In this context, peers and family exercise a significant influence on the identities of adolescents and young adults. The students will be asked to assess the nature of their relationship with friends and family and explore these negotiations in the context of sharing versus power.

The teacher will help students broaden their understanding by extending the discussion to include other social relationships, beyond peers and family. They will be encouraged to think about how they are influenced and how they in turn influence the people around them. The class shall explore the importance of open conversation as a means to resolve conflicts and contradictions.

Sharing vs Power: Peers

Identity formation and development is significantly dependent on the peer group with which the individual interacts. During this class, the students may pose the following question to themselves and to each other- What is the nature of the relationships that they share with their peers? Adolescents and young adults like to conform to peer expectations. Students may explore whether relationships between peers are equal. What forces mediate these relationships? By posing examples from real life, the teacher will encourage the students to closely examine their relationships with their friends and family.

Activities

Ask the students to describe their close friends with fictitious names. They should then be asked why they are close to them and what is the one quality about their friends that they appreciate.

Divide students into groups of 5 each. This can vary depending on the class size. Each group can discuss how they were influenced by their friends in decision making processes.

The class/ group can share a story from their life about how they made a decision based on peer pressure. They should also share the result. Were they happy or unhappy about it? The findings can be discussed in the class.

Sharing vs Power: Family

The family is often considered to be a given and stable construct in which one is born or placed. As the relationships of adolescents with people outside the home grow, their interactions with their families evolve and take on a new and sometimes difficult character. Discussions and activities in the class should help the students objectively analyse their family space and the way in which they negotiate with it at different points of time. Through examples from day to day life, the teacher will help the students understand such spaces and the role they play.

Activities

Describe the ideal family. The students can think about the nature of the ideal created by them. What is the role played by siblings in your personal development?

Role play can be used to perform the different roles in a family so as to understand the different points of view within it.

Sharing vs Power: Society

The individuals generally extend the nature of their relationships with the family to the larger social world. In their pursuit to seek autonomy and independence, they may form new kinds of relationships in the larger social context. These relationships may be characterised by imbalances in power. This lecture will try to help the students strike a balance between self and society and stress the role of dialogue, sharing and cooperation.

Activities

The teacher can ask the students to describe any one constructive social role performed by them. (Any way in which they helped people around them). They can draw, speak, share a photograph or write a creative piece about it.

In the years to come what kind of role do you see yourself performing in society?

Share any one story about a person that has really influenced you? It can be about a public figure or anyone around you.

Going Beyond Power Through Open Conversation

In the previous lectures, the discussion has been around family, peer groups and society. In this session, the focus will be on the ways to build a more egalitarian society—one that is more collaborative, inclusive and takes into account different points of view. Open Conversation is suggested as a way by which acceptance, active listening and empathy can be encouraged.

Activities

The students can be asked to present a brief performance showing the way in which open conversation can help in conflict resolution.

Movies in line with classroom discussions held in the past few weeks can be shown to the students. Movie screening should be followed by a discussion.

A short story, poem or a play can be used to build on classroom discussions.

Mindfulness

This module focuses on the significance of silence, introspection and non-judgmental awareness of the present moment. These mental practices are for understanding and building humane connection with self and others. The students are sometimes unable to spare time for their inner growth. Mindfulness practices aim at self-awareness and self- acceptance for overall well being. Valuing and practicing silence helps in the process of deeper reflection and builds inner strength to face conflicts with calmness. It hones the ability to develop mental equanimity and equipoise.

The Value of Silence and Reflection

The students will learn to understand the value of silence in the noise around. The practice of silence helps in self-reflection and connecting the inner and outer worlds. It enables one to experience joy, contentment and peace. Silence is a way of understanding how to enjoy one's own company and not to confuse being alone with loneliness. The students will appreciate that silence and solitude are positive and constructive.

Activities

The students can be asked to maintain silence and watch the flow of thoughts and emotions. In the process of silence the students can identify what gives them happiness and what they can do to create happiness for others.

The students can visit natural spaces to understand how silence runs in the sounds of nature which can help them realise peace.

Practice of Mindfulness

Through this lesson, the students will understand the significance of mindfulness as a daily practice for understanding that happiness depends on the self-training of mind. The joy of living in the moment with full awareness and steadiness of mind are important for accepting and cherishing all experiences positively and non-judgmentally.

Suggested Activities

Mindful walk/trek in the garden/forest/mountains or at a monument. Mindful eating while enjoying all elements of tastes in different types of food can also be done.

The students can be engaged in groups for non-judgmental listening

The class can be divided to discuss what activities of the day they engage with full awareness and where the moments go unnoticed

Unit 3

Identity, Self-image, Status, Self-worth

The module is designed to help the learners revisit the constructs of identity, self and personhood. It builds on questions such as 'who am I', 'how do others and I see myself', 'does status and self-image affect my sense of self-worth'. Specifically, it deals with how one's identity takes shape and thereon begins to be an integral part of oneself. It encourages the students to think about what factors influence their self-worth, such as achievements and accumulations, wealth, career or popularity. The students learn to accept and appreciate self and others.

Identity Construction and Expression: Individual and Collective

This lesson is aimed to help the learners deconstruct their sense of identity and rechart the signifiers/ markers and processes which have played a pivotal role in constructing their sense of identity and self. Itunfoldshowprocessesofsocialisationwithinfamily,school,community and society at large have played a role in making students who they are. How do

these processes shape our notions of self-concept, self-evaluation, and self-esteem? The students will be able to become aware of their individual and collective sense of identity and self.

Activities

The teacher may ask the students to imagine one's identity in different contexts that are significant for identity construction. For instance, what does identity of being someone's 'child' entail; likewise what kind of an identity does one expect of oneself as a sibling, student and as a friend.

The teacher may ask the students to read from biographies/autobiographies of people from other cultures and discuss excerpts from the books. The teacher may elaborate the qualities of these people.

The teacher may organise a field visit with the students to different places. Ask the students to survey people from those locales about their experiences.

Accepting and Valuing Oneself

This lesson builds on the previous lesson by unpacking how concerns revolving around self- image and status may affect one's sense of self. It aims to make one aware why a challenge to

one's identity may lead to discomfort and conflict. Students will be encouraged to accept their physical appearance and identity and to value self-worth. This lesson invites them to undertake an inward journey.

Activities

The teacher may ask students to respond to different characters in a movie where challenges to their identity lead to different kinds of responses.

What will change after 10 years in terms of your identity and what according to you will not change?

The teacher may ask the students to identify an 'open space' and 'sit alone' and write a reflective essay on the theme, 'remember what makes you, you'.

Gender Roles

The objective of this module is to enable the students to differentiate between biological and psychological context of gender in order to understand how

their gendered identities are socially constructed. Gender refers to the characteristics of men and women and includes norms, behaviour and roles associated with being man or woman, girl or boy. Further, this will enable the students to become aware that their destiny need not be determined by biology.

Understanding a Gendered World

The objective of this lecture is to enable the students to understand that gender roles are taught by the process of socialization, beginning with the family. Everyday things that we do like eating, speaking, walking, our gestures and even the professions that we think we choose are all often influenced by societal norms.

Activities

The teacher may ask the students to list things associated under the heading; men and women. Once listed, the headings can be interchanged and a discussion may follow.

Ask students to bring an artefact from home, it can be a childhood picture.On the basis of the picture students can share childhood experiences. Through the narrative of their oral history students can share experiences of how they acquired gender.

Identifying and Transcending Stereotypes

In the previous lecture, students have been made aware that gender stereotypes are socially constructed, that the ways in which we interact with others and with ourselves are shaped by gender. The objective of this lecture is to explain the importance of thinking beyond the stereotypes and to reinforce that biological differences between genders should not lead to social discrimination.

Activities

Movie viewing: Students and teachers can choose any movie for discussion.

Quiz cards: On the cards the following can be written and the student can be asked to identify which is socially constructed and which refers to biology.

Men are Breadwinners, Women are homemakers.

Males have XY chromosomes, Females have XX chromosomes. Women give birth to babies, men don't.

Boys don't cry

Digital Identity

It may be constricting to identify exclusively with ideas like region, ethnicity, language, gender, nationality. For, in this increasingly interconnected world, students find themselves at the intersection of many ideas - evolving and fixed, dominant and marginalised. This rainbow of ideas provides an opportunity to appreciate the diversity in the constitution of an individual's identity. But what happens when one is given a chance to construct a digital identity for oneself? Digital platforms and social networking sites arguably provide an individual the choice to portray oneself the way one likes. Do we choose to present our authentic selves or do we prefer to present highly curated versions of ourselves? Do social media posts reflect self- respect and self-love?

Identity Formation and Validation in the Digital World

Through this session, students are expected to realise the ways in which they construct themselves digitally and how that construction is a manifestation of conformity, resistance and/or subversion, of the dominant ideologies. Students should be encouraged to reflect on what exactly they are seeking from engaging with social media. They need to think how the joy of sharing ideas may be different from the egoic need for compulsive validation.

Activities

Think of the digital filters that you use before sharing your photographs with others. Why do you think you need to do that?

We often feel happy about being validated in the form of 'likes' and positive comments on our social media posts. However, do you feel sad when that does not happen? What could be the possible reason for your mind to have this line of thought?

Digital Identities: Impact on the Self

The students will carry forward the learnings from the previous session and continue their inquiry in the realm of motivations for curating a digital self and its relation to self-esteem. They would be encouraged to engage in a non-judgemental conversation which would motivate them to inquire whether

their digital activities are a result of anxiety which may be emanating from their self-image.

Activities

Do you think the use of digital filters is disrespectful to your self? Is not using them a source of anxiety for you? Can this have anything to do with your self-esteem?

Think of situations that make you feel sad on social media. Note them down. Do you think not exposing yourself to such a situation is a solution or do you think you also need to locate the issue within yourself?

Try spending a day without doing any activity on social media like posting anything or surfing other people's accounts for their activities. At the end of the day observe how you feel.

Unit IV

Lifestyle Choices

How we choose to live and behave influences our social and emotional wellbeing. In this module we analyse our lifestyle choices relating to material and cultural consumption, relationships and career. Students will be encouraged to inquire whether our everyday choices are based on a culture of passive consumption and conformism. We will seek to explore possibilities of alternative forms of living premised on ethical consumption, altruism, simple and sustainable living.

What Choices Does One Get to Make?

In this session, the attempt will be to explore the extent to which consumerism impacts our lifestyle choices and the repercussions of these on our natural and social environment. Today we live in an era of mass consumption and consumer culture fostered by advanced technologies and global production systems. Overt materialism, wasteful and conspicuous consumption unmindful of the larger implications are key aspects of this phenomenon. In this lecture, we explore our lifestyle choices such as our physical image, attire, dietary choices, desire for dream homes and destination weddings. This would be the starting point for a re-imagination of a world based upon choices that would lead to simple and sustainable living.

Suggested Activities

Students may be asked to work through their consumption history right from their childhood. A discussion may then be initiated by asking the students to reflect on their consumption choices and their motives behind the same.

The teacher may identify a few products like tea, coffee, coca-cola, jeans etc and ask the students to trace product histories and geographies.

The students may be asked to discuss a strong desire to possess an object and then deconstruct that desire. Discussion may emphasise upon why they wanted it?

Is Choice Influenced? Relationships, Career Choices

In this lecture, we examine the extent to which lifestyle choices, regarding relationships and career, get influenced and by what factors. Do we really have a choice as regards the career that we intend to pursue? Often factors like family, gender, the need for security and stability influence our choices. Recognizing and mapping the space of freedom and unfreedom with respect to our choices is a necessary life skill that would enable a more self-aware and harmonious living.

Activities

Reflect on an instance where you may have inflicted pain on someone and also think of a moment when you felt someone was insensitive in their conduct of a relationship.

The teacher may divide the class into small groups and hold a discussion on what constitutes a successful career.

Reflect on the various career options available in your society and discuss what you would prefer to pursue and why?

Discrimination

The module is designed to help the learners understand the origin and nature of discrimination and the effects thereof. Discrimination can be on various grounds such as ethnicity, religion, caste, race, gender, disability, or place of birth. One's discriminatory actions can lead to social fragmentation. The module encourages the learners to introspect their actions and seeks to celebrate diversity.

Why and How? Forms of Discrimination

The objective of this lesson is to make learners aware of different forms of discrimination. On the one hand, an individual can be a victim of discrimination, and on the other, the same person

may harbour prejudice or discriminate against others. It is pertinent to understand our own biases and introspect our actions.

Activities

The teacher can ask students to count their friends who belong to different backgrounds. They can reflect on what they have learned by interacting with these friends.

Ask students to learn about their neighbourhood and document what groups live there, what has been the nature of their relationships.

An exercise on privilege using nothing but wadded up papers and a trash can. Students Learn A Powerful Lesson About Privilege. https://youtu.be/2KlmvmuxzYE

Stress and Its Management

This module is designed to give students an opportunity to articulate the pressures and

challenges that one experiences in life. It gives students a chance to spell out how pressure to perform well can become a source of stress. The module is aimed to equip the learners with ways of dealing with disappointments with regard to the choice of career path and with performance related stress. It brings to fore skills of coping with stress and disappointments. It also highlights the role of physical well-being in keeping oneself mentally healthy.

Career Pressures, Examinations

This lesson is designed to help students have a relook at the challenges and pressures they have recently faced or are facing on account of career choices and examinations. It gives them a space to articulate what they might have faced while making these choices. This lesson also gives them an opportunity to highlight the uncertainties and challenges they foresee in their future lives.

Activities

The teacher may ask the students to organise themselves in groups of 4-6. Each of the groups have to do a role-play around the themes on career pressures.

Show images of different people and ask the students to quickly jot down impressions. The collective answers serve as a springboard for discussions. Students may learn about their own biases through this activity.

The teacher may ask the students to identify movies where struggles related to career and performance pressure stand out.

The teacher may ask the students to share their experiences about the following:

- First few months into an academic programmes
- 2 months before examinations
- On the day of examination
- 15 days after examinations get over

Dealing with Disappointments, Coping Skills, Health and Fitness

This session aims to equip the learners with coping skills to manage stress and deal with disappointments. Furthermore, it makes them aware of the importance of health and fitness for maintaining mental health.

Activities

The teacher can ask the students to write how they come to know they are stressed and what they do when they are stressed? The teacher may engage them in a discussion on coping skills and channelize students' energies into positive ways of resolutions of conflict and stress.

The teacher may ask the students to discuss the lives of high achievers and low achievers and

how performance pressures drive their lives. Can they draw similarities and differences in the sources of stresses and how they deal with these stresses?

Ask each of the students to share their daily regime to keep themselves physically fit. The students may also share how each one mentally 'feels/experiences' when one is engaged in physical exercises.

Connect with Nature

This module is designed to strengthen bonds with nature while understanding its intrinsic value as opposed to its instrumental value. Issues of global warming

and environmental degradation are the consequences of a disconnect between humans and nature. The aim is to cultivate environmental awareness through virtues of altruistic responsibility, empathy, cohesiveness, and mutual sustainability between nature, flora-fauna, animals and humans. The students may be engaged in activities to build bridges between the inner environment (one's self) and external environment (nature). In this way, they can celebrate oneness with nature and perceive nature not as a means but an end in itself.

Sensitivity Towards Other Sentient Beings

The students, in this session, would participate in group based environmental activities as a way of building social responsibility towards all sentient beings. Any action against even a part of nature impacts the whole. Thus, it is the responsibility of all, to create a safe environment for all sentient beings to live in harmony.

Activities

Students can be encouraged for Nature walks, nature drives, treks and hikes, nature photography, adopting natural spaces in local areas, plantation drives, visiting biodiversity parks, adopting spaces for greening etc.

Visits to animal shelters can be organised to sensitise the students.

Films can be screened on environmental sustainability, environmental consciousness etc

- Any other Practical/Practice as decided from time to time

Suggested Readings

- Black,Donna Lord(2022). Essentials of Social and Emotional Learning (SEL). NJ : Wiley.
- Goleman,Damiel (2005). Emotional Intelligence.USA:Bantam.
- Swami Vivekanand. (2016).The complete works of Swami Vivekanand. Advaita Ashrama.(https://www.ramakrishnavivekanand.info/vivekanand/complete works.html)

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: SPORTS FOR LIFE - I

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Sports for Life - I	02	0	0	2	Pass in Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are

- To imbibe the significance of sports to promote health, fitness and wellness in life.
- To understand the values of teamwork, tolerance, goal-setting and decision making.
- To learn the strategies and tactical moves while playing a sport.
- To understand the importance of physical activity in reference to 3S: strength, speed and suppleness.

Learning outcomes

The learning Outcomes of this course are

- Acquire values of cooperation, team spirit, determination, and endurance.
- Acquire good health and psychological well-being through sports participation.
- Apply the decision making-ability and goal-setting skills acquired through sports participation in everyday life.
- Acquire skills for engaging in moderate or vigorous physical activity and sports participation.
- Reduce exposure to screen time on electronic gadgets and channelising energy through sports participation.

SYLLABUS OF SPORTS LIFE 1
ONLY PRACTICAL

UNIT – I: Rules and Techniques **(4 Weeks)**

Concept

- Rules of the Sport
- Techniques / skills in the sport/ Aerobic Skills

Practical

- Marking of the court / field
- Outdoor Adventure Activity
- Skills learning in sports
- Group Games / Relays
- Participation in Intramural competitions

UNIT – II: Components of Fitness **(4 Weeks)**

Concepts

- Meaning and Development of Strength, Speed,
- Endurance, Flexibility and Coordinative Abilities.

Practical

- Skills learning and Participation in sports
- Group Games / Relays / Minor games
- Participation in Intramural competitions

UNIT – III: Benefits of sports and physical activity **(4 Weeks)**

Concepts

- Effect of exercise on the body
- Organizing of a sports competition
- Balanced Diet

Practical

- Skills learning and participation in sports
- Group Games, / Relays /Step Aerobics
- Participation in Intramural competitions

UNIT – IV Sports in Contemporary Times **(3 Weeks)**

Concepts

- Honours and Awards associated with sports and sportspersons

Practical

- Skills learning and Participation in sports
- Participation in Intramural competitions

Practical component : 30x2 (15 weeks)

The concepts are to be dealt with during the practical/practice classes: Aerobics and Physical Activity, Athletics, Archery, Badminton, Basketball, Boxing, Chess, Carrom, Cricket, Football, Handball, Hockey, Kabaddi, Kho-Kho, Swimming, Shooting, Squash, Table-Tennis, Tennis, Taekwando, Volleyball, Wushu, Wrestling etc.

Suggestive readings

- James R Morrow Jr., Dale P. Mood, James G. Disch, Minsoo Kang - Measurement and Evaluation in Human Performance-Human Kinetics Publishers (2015)

- W.Larry Kenney, Jack H. Wilmore, Devid L.Costil.(2015). Physiology of Sports and Exercise, Second Edition. USA.Human Kinetics.

- Wener W.K. Hoeger, Sharon A. Hoeger - Fitness and Wellness-Cengage Learning (2014)

- Kansal DK (2012).A practical approach to Measurement Evaluation in Physical Education & Sports selection. Sports & Spiritual Science Publications, New Delhi.

- Websites of International Sports Federations, Ministry of Youth Affairs and Sports Govt. of India

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: SWACHH BHARAT

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Swachh Bharat	02	1	0	1	**Pass in Class 12th**	NIL

Learning Objectives

The Learning Objectives of the Course are:

- To understand the developmental challenges with reference to sanitation infrastructure and practices.
- To build values of cleanliness, hygiene and waste management in diverse socio-economic contexts.
- To understand planning of social policy and programmes.
- To use waste management techniques at community level.
- To instil a sense of service towards society and the Nation.

Learning Outcomes

The Learning Outcomes of the course are:

- Understanding the significance of the Swachh Bharat Abhiyan.
- Ability to analyse and predict the sanitation challenges of India
- Determine the link between sanitation and development.
- Contribute to the Swachh Bharat Abhiyan through real time projects/fieldwork.

SYLLABUS OF SWACHH BHARAT

UNIT – I Introduction to Swachh Bharat Abhiyan (4 Weeks)

- Gandhian philosophy of Cleanliness
- Swachh Bharat Abhiyan (SBA)
- Hygiene, Sanitation & Sustainable Waste Management
- Agencies and nodal Ministries for SBA

- Different phases of the SBA and its evaluation
- Citizens' Responsibilities: Role of Swacchagrahi

UNIT – II Swachh Bharat: Rural and Urban Facets (8 Weeks)

- Indicators for Swachh Bharat
- Rural
  i. Sanitation coverage across households (2014 vs. 2022)
  ii. Open Defecation Free (ODF) Villages: Parameters
  iii. ODF plus model: Key indicators
- Urban
  i. Sustainable sanitation
  ii. Waste/water and solid waste management
  iii. Garbage Free Cities

UNIT – III Prospects and Challenges (3 Weeks)

- Attitudes and Perceptions
- Operational and Financial issues
- Monitoring & Supervision
- Community Mobilization

Practical component (if any) – (15 Weeks)

Suggested Activities: List of activities to be undertaken:

- Identify plastic and e-waste in and around the institution and suggest innovative technologies to minimize wastage.
- Identify events/fests that generate maximum waste and ways to minimize it.
- Visit canteen/shops and track the lifecycle of wet/dry waste in and around the institution and document the findings in the form of a Project Report.
- Conduct interviews of stakeholders to understand the level of awareness.
- Conduct a Clean Audit of the Institution and identify areas for action.
- Conduct cleanliness drives.
- Organise Swachhata Pakhwada meetings, rallies, and mobilization camps within the identified communities.
- Students may participate in the Swachh Bharat Internship programme.
- If required students can share their experiences in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Essential Readings

- "Swachh Bharat Mission - Gramin, Department of Drinking Water and Sanitation, Ministry of Jal Shakti"
- India 2021, Ministry of Information & Broadcasting
- http://swachhbharatmission.gov.in/SBMCMS/swachhta-pakhwada.htm
- https://swachhbharatmission.gov.in/SBMCMS/about-us.htm
- https://www.communityledtotalsanitation.org/sites/communityledtotalsanitation.org/files/ODF_verification_checklist.pdf
- https://sbm.gov.in/phase2dashboard/PhaseII/NationDashboard.aspx
- https://www.niti.gov.in/sites/default/files/2019-08/Report%20of%20Sub-Group%20of%20Chief%20Ministers%20on%20Swachh%20%20Bharat%20Anhiyaan.pdf

Suggested Readings

- https://swachhbharatmission.gov.in/SBMCMS/writereaddata/Portal/Images/pd/brochure/Greywatermanagement.pdf
- https://swachhbharatmission.gov.in/SBMCMS/writereaddata/Portal/Images/pdf/brochure/PWMB5_28th_June.pdf
- GoI (2020). Swachh Bharat Mission (Grameen) Phase 2: Operational guidelines. Department of Drinking Water and Sanitation, Ministry of Jalshakti.
- MoHUA (2017). Guidelines for Swachh Bharat Mission - Urban (PDF). Ministry of Housing and Urban Affairs, Government of India.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: THE ART OF BEING HAPPY

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
The Art of Being Happy	02	1	0	1	**Pass in Class 12th**	NIL

Learning Objectives

- To synthesize the insights developed by Human Development experts, Psychologists, Anthropologists on one hand, and the intellectual traditions of Vedantic Philosophy and Indology on the other towards the experience of happiness.
- To illustrate various factors that determine the subjective experience of happiness in a cross cultural context.

Learning outcomes

- The students shall be able to evaluate the factors contributing to the phenomenon of happiness in the personal, familial and community life of an individual in different cultures in the Indian context.
- They will be able to develop healthy interpersonal relationships and wellbeing cherishing the values of Indian culture and philosophy.
- They will be able to relate to the global phenomenon of sustainable development and become sensitive to the needs of the planet.
- They will be able to apply the experience of *Aananda* at a personal level.

SYLLABUS OF THE ART OF BEING HAPPY

UNIT – I Human Ecology and Happiness Lectures (3 Weeks)

- Definitions/Factors of Happiness: Environmental and Social

- Physical, emotional and psychological well-being for happiness
- Physiological and hormonal basis of happiness
- Coping with Stress: A life saving skill

UNIT – II Indological Theories of Happiness (4 Weeks)

- *Panch Kosh* Theory & Idea ofWell-Being
- Idea of Self and other
- Hierarchy and stages of happiness

UNIT – III Happiness: Cross-cultural Contexts (4 Weeks)

- Culture and Happiness
- Interpersonal Relationship: Comparative Perspective
- Towards Self-Actualization

UNIT – IV Local and Global Perspective of Happiness (4 Weeks)

- Measuring happiness: Key indicators
- Happiness Index
- India in Global Happiness Indices

Practical component (if any) – (15 Weeks)

The course will be based on students' identification and operationalization of the concept of happiness and well-being. Students will explore the indicators and actualization of these concepts in everyday life.

- Community surveys on the facilities promoting positive mental health practices such as Yoga and Meditation Centres, Recreation clubs, and Parks for youth and senior citizens shall be carried out by the students.
- Extending help and social service by visiting old age homes/ hospitals/slum areas or any other disadvantaged groups.
- Students can undertake a field work / project independently or work as an Intern with NGOs working in the area of happiness and well-being.
- Critical appreciation of a documentary/ film based on Happiness and Well-being can be undertaken by the students.
- Workshops/ Sessions for the actualization of innate creative potential- (Music, Drawing, Calligraphy, Dramatics)

- Hands-on Happiness: Gardening, Cleaning, Washing, Cooking, etc.
- If required, students can share their experiences in the form of a Project Report.
- Students may share their experiences in the form of Audio-video presentations of 15-20 minutes.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Banavathy, Vinayachandra & Choudry, Anuradha. (2013). Understanding Happiness: A Vedantic Perspective. Psychological Studies. 59. 141-152. 10.1007/s12646-013-0230-x.
- Leontiev, Dmitry. (2012). Anthropology of Happiness: the state of Well-Being and the way of Joy,In SocialScience,sVol43. No 2 P93-104.
- Snyder .C.R. S.J. Lopez & J.T. Pedrotti. (2015). Positive Psychology (The Scientific and Practical Explorations of Human Strengths): Sage Publication. (Chapter 5: Subjective Well-being: The Science of Happiness and Life Satisfaction, Page 63 to 73)
- World Development Indicators 2016. (2016).United States: World Bank Publications.
- Zelenski, John. (2019) Positive Psychology: The Science of Well-Being, Carleton University, Ottawa, Canada, Sage Publications Chapter 3:Happiness;page (77 to 110)

Suggestive readings

- Baumgardner,S&Crothers,M.(2014).Positive Psychology. New Delhi: Pearson Education, India.
- Goleman,D.(2007).Social Intelligence: The new science of human relationships, RHUK
- Mathews, Gordon and Carolina Izquierdo (eds). (2010). Pursuits of Happiness: Well being in Anthropological Perspective. Berghan Books
- Seligman,M.(2002). Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfilment. NewYork:Free Press.
- Sri Aurobindo, The Synthesis of Yoga, Part Three: The Yoga of Divine Love, Chapter 7, The Ananda Brahman, pp. 569-570

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: VEDIC MATHEMATICS - I

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Vedic Mathematics - I	02	1	0	1	12^{TH} Pass	NIL

Learning Objectives

The Learning Objectives of the course are:

- Foster love for maths and remove its fear through Vedic Mathematics
- Enhance computation skills in students through Vedic Mathematics
- Develop logical and analytical thinking
- Promote joyful learning of mathematics
- Discuss the rich heritage of mathematical temper of Ancient India

Learning outcomes

The Learning Outcomes of the course are

- Overcome the fear of maths
- Improved critical thinking
- Familiarity with the mathematical underpinnings and techniques
- Ability to do basic maths faster and with ease.
- Appreciate the Mathematical advancements of Ancient India.

SYLLABUS OF VEDIC MATHEMATICS - I

UNIT – I Vedic Maths- High Speed Addition and Subtraction Sessions/Lectures (5 Weeks)

- Vedic Maths: History of Vedic Maths and its Features
- Vedic Maths formulae: Sutras and Upsutras
- Addition in Vedic Maths: Without carrying, Dot Method

- Subtraction in Vedic Maths: Nikhilam Navatashcaramam Dashatah (All from 9 last from 10)
- Fraction –Addition and Subtraction

UNIT – II Vedic Maths- Miracle Multiplication and Excellent Division (4 Weeks)

- Multiplication in Vedic Maths: Base Method (any two numbers upto three digits)
- Multiplication by Urdhva Tiryak Sutra
- Miracle multiplication: Any three-digit number by series of 1's and 9's
- Division by Urdhva Tiryak Sutra (Vinculum method)

UNIT – III Vedic Maths-Lightening Squares and Rapid Cubes (3 Weeks)

- Squares of any two-digit numbers: Base method
- Square of numbers ending in 5: Ekadhikena Purvena Sutra
- Easy square roots: Dwandwa Yoga (duplex) Sutra
- Square root of 2: Baudhayana Shulbasutra
- Cubing: Yavadunam Sutra

UNIT – IV Vedic Maths-Enlighten Algebra and Geometry (3 Weeks)

- Factoring Quadratic equation: Anurupyena, Adyamadyenantyamanty Sutra
- Concept of Baudhayana (Pythagoras) Theorem
- Circling a square: Baudhayana Shulbasutra
- Concept of pi: Baudhayana Shulbasutra
- Concept angle (θ) 0o, 30o, 45o, 60o and 90o: Baudhayana number

Practical component : (If any) (15 Weeks)

The students are expected to demonstrate the application of Vedic Maths: Sutra and Upsutra

- Conduct workshops under the supervision of the course teacher to spread awareness on the utility of Vedic Mathematics.
- Students are required to visit nearby retail shops/local vendors to purchase stationery/vegetables/bread and butter and use tricks of Vedic maths of addition and subtraction to calculate the amount to pay and receive the difference.
- Students may share their experience with the class teacher in the form of audio-video presentations of 15 minutes.
- If required, students can share their experiences in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Essential Readings

- The Essential of Vedic Mathematics, Rajesh Kumar Thakur, Rupa Publications, New Delhi 2019.
- Vedic Mathematics Made Easy, Dahaval Bathia, Jaico Publishing, New Delhi 2011
- Vedic Mathematics: Sixteen Simple Mathematical formulae from the Vedas, Jagadguru Swami Sri Bharati Krishna Trithaji, Motilal Banarasidas, New Delhi 2015.
- Learn Vedic Speed Mathematics Systematically, Chaitnaya A. Patil 2018.

Suggested Readings

- A Modern Introduction to Ancient Indian Mathematics, T S Bhanumurthy, Wiley Eastern Limited, New Delhi.
- Enjoy Vedic Mathematics, S M Chauthaiwale, R Kollaru, The Art of Living, Bangalore.
- Magical World of Mathematics, VG Unkalkar, Vandana publishers, Bangalore.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: Yoga: PHILOSOPHY AND PRACTICE

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Yoga: Philosophy and Practice	02	1	0	1	12th Pass	NIL

Learning Objectives

The Learning Objectives of the course are:

- To learn the fundamentals of Yoga for harmonising the body, mind and emotions.
- To demonstrate the value and the practice of holistic living.
- To value the heritage of Yoga for self and society.

Learning outcomes

The Learning Outcomes of the course are:

- Understanding ways to harmonise the body and mind through Yoga.
- Disciplining the mind through practicing Yoga.
- Understanding of consciousness through practical training.

SYLLABUS OF YOGA: PHILOSOPHY AND PRACTICE

UNIT – I Yoga: *Asana, Prāṇāyāma* and *Dhyana* **(5 Weeks)**

- History of Yoga
- Significance of Asana
- Effect of Praṇayama
- Importance of Dhyana

UNIT – II Patanjali's *Yogasūtra* and *Chakra* **(6 Weeks)**

- Patanjali's Yogasūtra: a summary
- First sutra
- Second sutra
- Chakras (psychic centres)

UNIT – III Understanding *Asana* and *Pranayama* **(4 Weeks)**

- Asana: the basics
- SuryaNamaskara
- Nadishodhana Praṇayama

Practical component (if any) **(15 Weeks)**

- Surya Namaskar
- Selected Asana
- Praṇayama
- Relaxation exercises for the eyes (7 steps) neck (4 steps)
- Concentration on Bhrumadhya
- Project Work (effect of everyday concentration on breath for 15 minutes: reflections to be compiled in the form of a Project report.
- Any other Practical/Practice as decided from time to time

Essential Readings

- Āsanas, Prāṇāyāmaand Mudra Bandh , Swami SatyanandaSaraswati, Yoga Publications Trust, Munger, Bihar, India, 2004.
- Patanjali Yogasutras, Commentary by Swami Vivekanand, Rajyoga

Suggested Reading

- Patanjal Yog Pradeep- Swami Omanand Saraswati, Gita Press, Gorakhpur, 2013.
- Science of Pranayama-Swami Sivananda, Edition by David De Angellis, 2019, All Rights Reserved.
- Udayveer Shastri Granthavali,4, Patanjal- Yoga Darshanam, Udayavir Shastri, Govindram Hasanand, Delhi 6.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

VAC 1: भारतीय भक्ति परंपरा और मानव मल्य

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
भारतीय भक्ति परंपरा और मानव मूल्य	02	1	0	1	Pass in Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- भारतीय भक्ति की महान परंपरा, प्राचीनता और इसके अखिल भारतीय स्वरूप से छात्रों का परिचय कराना
- भारतीय भक्ति परंपरा के माध्यम से छात्रों में मानव मूल्यों और गुणों को जगाकर उनका चारित्रिक विकास करना और एक अच्छे मनुष्य का निर्माण करना ।
- छात्रों को भारतीय नैतिक, सांस्कृति क और सामाजिक मूल्यों के प्रति जागरूक करना ।
- भारतीय भक्ति परंपरा के माध्यम से राष्ट्रीयता और अखिल भारतीयता की भावना जागृत करना।

Learning outcomes

The Learning Outcomes of this course are as follows:

- भारतीय भक्ति परंपरा के माध्यम से छात्रों में मानव मूल्यों और गुणों को विकास होगा और वे एक अच्छे और चरित्रवान मनुष्य बन सकेंगे ।
- भारतीय भक्ति परंपरा के सांस्कृतिक और सामाजिक पक्षों की जानकारी हो सकेगी।
- भक्ति की प्राचीनता और अखिल भारतीय स्वरूप की जानकारी से राष्ट्रीयता और अखिल

भारतीयता की भावना जागृत और मजबूत होगी।

• प्रमुख भक्त कवियों का परिचय और उनके विचारों की जानकारी हो सकेगी।

SYLLABUS OF परंपरा और मानव मूल्य

UNIT – I भारतीय भक्ति परंपरा **(5 Weeks)**

- भक्ति : अर्थ और अवधारणा
- भक्ति के वि भि न्न संप्रदाय और सि द्धांत
- भारत की सांस्कृति क एकता और भक्ति
- भक्ति का अखि ल भारतीय स्वरूप

UNIT – II भारत के कुछ प्रमुख भक्त और उनके वि चार **(5 Weeks)**

संत ति रुवल्लुवर , आण्डाल, अक्कमहादेवी, ललद्यद , मीराबाई, तुलसीदास, कबीरदास, रैदास, गुरु नानक, सूरदास, जायसी, तकु ाराम, नामदेव, नरसिहं मेहता, वेमना, कंु चन, नम्बियार, चतैन्य महाप्रभ,ु चंडीदास, सारला दास, शंकरदेव

UNIT – III मानव मूल्य और भक्ति **(5 Weeks)**

मानव मूल्य का अर्थ

चयनि त भक्त कवि यों की जीवन मूल्यपरक कवि ताएँ

Practical component (if any) – **(15 Weeks)**

- पाठ्यक्रम में उल्लिखित कवियों में से किसी एक कवि की रचनाओं में विभिन्न मानव मूल्यों के आधार पर प्रोजेक्ट
- वर्तमान समय में भक्ति की प्रासंगि कता को समझना; सर्वे और साक्षात्कार पद्धति के आधार पर.
- जीवन में मानव मूल्यों के प्रति पालन पर सर्वे और साक्षात्कार के आधार पर एक रि पोर्ट बनाना.

- उल्लिखित कवियों में से किसी एक कवि से संबंधि त किसी मठ, आश्रम या मंदिर आदि, अथवा कोई फिल्म/ डॉक्युमेंट्री के आधार पर रिपोर्ट बनाना.
- आवश्यक हो, तो छात्र प्रोजेक्ट रिपोर्ट के रूप में अपने अनुभव साझा करें
- **Any other Practical/Practice as decided from time to time**

Essential/recommended readings

- 'भक्ति का उद्भव और विकास तथा वैष्णव भक्ति के विविधरूप, भारतीय साहित्य का समेकित इतिहास, संपादक- डॉ नगेंद्र, हि ंदी माध्यम कार्यान्वयन निदेशालय, दिल्ली विश्वविद्यालय, दिल्ली, पृष्ठ संख्या **215-250**
- कुछ प्रमुख कवियों के चयनित पद
- 'भक्ति आंदोलन और भक्ति काव्य', शिव कुमार मिश्र, अभिव्यक्ति प्रकाशन, इलाहाबाद, **1994**
- 'मानव मूल्य और साहित्य, डॉ धर्मवीर भारती, भारतीय ज्ञानपीठ, नई दिल्ली,**1999**

Suggested readings

- 'भक्ति के आयाम', डॉ. पी. जयरामन, वाणी प्रकाशन, नई दि ल्ली
- 'हि ंदी साहित्य का इतिहास, आचार्य रामचंद्र शुक्ल, लोक भारती प्रकाशन, इलाहाबाद
- 'मध्यकालीन हि ंदी काव्य का स्त्री पक्ष', डॉ. पूनम कुमारी, अनामि का पब्लिशर्स एंड डिस्ट्रीब्युटर्स, नई दिल्ली
- 'मध्यकालीन हि ंदी भक्ति काव्य: पुनर्मूल्यांकन के आयाम', डॉ. पूनम कुमारी, अनामि का पब्लिशर्स एंड डिस्ट्रीब्युटर्स , नई दिल्ली

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: साहित्य संस्कति और सिनेमा

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
साहित्य संस्कृति और सिनेमा	02	1	0	1	Pass in Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- साहित्य , संस्कृति और सिनेमा के माध्यम से छात्रों का सर्वांगीण विकास करना
- छात्रों को नैतिक,सांस्कृति क और संवैधानि क मूल्यों के प्रति जागरूक करना
- भारतीय ज्ञान परंपरा,वैज्ञानि क दृष्टि कोण और तार्किक क्षमता को प्रोत्साहित करना
- साहित्य,संस्कृति और सि नेमा के माध्यम से राष्ट्र प्रेम की भावना जागृत करना
- सामूहिक कार्यों के माध्यम से सम्प्रेषण,प्रस्तुतीकरण एवं कौशल दक्षता विकसित करना

Learning outcomes

The Learning Outcomes of this course are as follows:

- साहित्य ,संस्कृति और सिनेमा के माध्यम से नैतिक,सांस्कृतिक और संवैधानिक मूल्यों की समझ वि कसि त होगी
- भारतीय ज्ञान परंपरा और नैतिक मूल्यों के प्रति सकारात्मक दृष्टिकोण बनेगा
- वैचारि क समझ एवं तार्किक क्षमता का विकास होगा
- परियोजना के माध्यम से संप्रेषण एवं प्रस्तुति करण दक्षता का विकास होगा
- छात्रों के व्यक्तित्व का सर्वां गीण विकास होगा

SYLLABUS OF **साहित्य संस्कृति और सिनेमा**

UNIT – I साहित्य,संस्कृति और सिनेमा का सामान्य परिचय (2 Weeks)

- साहित्य, संस्कृति और सिनेमा : परिभाषा और स्वरूप
- साहित्य , संस्कृति और सिनेमा का अंत:संबंध

UNIT – II साहित्यिक कृतियों पर आधारित सिनेमा (6 Weeks)

- साहित्यिक कृतियों पर आधारित सिनेमा में परिकल्पना
- साहित्यिक कृतियों पर आधारित सिनेमा की प्रासंगि कता
- साहित्यिक कृतियों पर आधारित सिनेमा- आनंदमठ 1952, तीसरी कसम 1966, रजनीगंधा 1974, पद्मावत 2016

UNIT – III हिन्दी सिनेमा में सामाजिक –सांस्कृतिक मूल्यों की अभिव्यक्ति (7 Weeks)

- सामाजि क - सांस्कृति क मूल्य
- सामाजि क - सांस्कृति क मूल्य के शक्ति शाली उपकरण के रूप में सि नेमा
- हि न्दी सि नेमा में अंतर्नि हि त सामाजि क- सांस्कृति क मूल्य – मदर इंडि या 1957, बंदिनी 1963, पूरब और पश्चि म 1970, हम आपके हैं कौन 1994, टॉयलेट: एक प्रेमकथा 2017

Practical component (if any) – (15 Weeks)

- भारतीय सांस्कृतिक मूल्यों पर आधारित लघु फिल्म हेतु पटकथा लेखन **(8-10** मि नट **)**
- साहित्यिक रचनाओं का फिल्मांतरण **(8-10** मिनट **);** यह सामूहिक क्रियाकलाप होगा
- राष्ट्रप्रेम, कुटुंब, शांति , पर्या वरण, जल-संरक्षण, स्वच्छता,मित्रता, सत्यनिष्ठा, कर्मनिष्ठा, समरसता में से किसी एक विषय पर मूक फिल्म निर्माण **(8-10** मि नट**)**
- आवश्यक हो, तो छात्र प्रोजेक्ट रिपोर्ट के रूप में अपने अनुभव साझा करें
- **Any other Practical/Practice as decided from time to time**

Essential/Recommended readings

- 'संस्कृति क्या है (निबंध) सस्ंकृति ,भाषा और राष्ट्र, रामधारी सिहं दिनकर, लोक भारती प्रकाशन,2008,पृष्ठ संख्या 60-64.
- साहित्य का उद्देश्य(निबंध) ,प्रेमचंद ,एस. के.पब्लिशर्स,नई दि ल्ली,1988,पृष्ठसंख्या 7-18.
- भारतीय संस्कृति के स्वर,महादेवी वर्मा , राजपाल एंड संस प्रकाशन 2017 .
- हि ंदी सिनेमा ; भाषा ,समाज और संस्कृति (लेख), पृष्ठ संख्या 11-18 भाषा ,साहित्य ,समाज और सस्कृति खंड 6,प्रो. लालचंद राम, अक्षर पब्लिशर्स एंड डिस्ट्रीब्यूटर्स,2020
- सिनेमा और साहित्य का अंतःसंबंध (लेख) पृष्ठ संख्या 30-34,साहित्य और सिनेमा, परुषोतम कंु दे (संपा.) साहित्य सस्ंथान,2014
- साहित्यिक रचनाओं का फिल्मांतरण (लेख) पृष्ठ संख्या 206-212,लोकप्रिय सिनेमा और सामाजिक यथार्थ ,जवरीमल पारख, अनामि का पब्लिशर्स एंड डिस्ट्रीब्यूटर्स प्रा.लि., 2019

Suggested readings

- सिनेमा और संस्कृति ,राही मासूम रजा, वाणी प्रकाशन, प्रकाशन वर्ष, 2018.
- जीवन को गढ़ती फिल्में, प्रयाग शुक्ल
- सिनेमा और संसार, उदयन वाजपेयी
- साहित्य,संस्कृति और समाज परिवर्तन की प्रक्रि या(नि बंध)अज्ञेय, संपाoकृष्णदत्तपालीवाल, सस्ता साहित्य मंडल,नई दि ल्ली, 2010, पृष्ठसंख्या 25-41
- सिनेमा समकालीन सिनेमा ,अजय ब्रह्मात्मज,वाणी प्रकाशन,2006
- कल्चर इन्डस्ट्री रिकन्सि डर्ः पृष्ठसंख्या- 98-106 कल्चरइन्डस्ट्रीःथ्योडोरएडोर्नो , राउटलेज (भारतीयसंस्करण)
- दि सिग्निफिकेन्स ऑफ कल्चर इन अन्डर्स्टैंडिग ऑफ सोशल चेंज इन कन्टेम्परिर इंडियाः पृष्ठसंख्या- 25-39.
- कल्चर चेंज इन इंडियाःआइडन्टिटी एंड ग्लोबलाइजेशनः योगेन्द्र सिहं .रावत पब्लिकेशन, जयपुर,भारत.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: सृजनात्मक लेखन के आयाम

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
सृजनात्मक लेखन के आयाम	02	1	0	1	Pass in Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:

- सृजनात्मकता और भाषायी कौशल का संक्षिप्त परिचय कराना
- विचारों का प्रभावी प्रस्तुति करण करना
- सजृनात्मक चितंन और लेखन क्षमता को विकसित करना
- मीडि या लेखन की समझ विकसित करना

Learning outcomes

The Learning Outcomes of this course are as follows:

- सजृनात्मक चितंन और लेखन क्षमता का विकास हो सकेगा
- लेखन और मौखिक अभिव्यक्ति की प्रभावी क्षमता विकसित हो सकेगी
- मीडिया लेखन की समझ विकसित होगी
- विद्यार्थी में अपने परिवेश, समाज तथा राष्ट्र के प्रति संवेदनशीलता का विकास होगा

SYLLABUS OF सृजनात्मक लेखन के आयाम

UNIT – I सृजनात्मक लेखन **(5 Weeks)**

- सृजनात्मक लेखन : अर्थ, स्वरूप और बोध

• सृजनात्मक लेखन और परिवेश
• सृजनात्मक लेखन और व्यक्तित्व निर्माण

UNIT – II सृजनात्मक लेखन : भाषि क संदर्भ **(5 Weeks)**

• भाव और विचार का भाषा में रूपान्तरण
• साहित्यि क भाषा की विभिन्न छवि याँ
• प्रिटं तथा इलेक्ट्रोनिक माध्यमों की भाषा का अंतर

UNIT – III सृजनात्मकता लेखन – विविध आयाम **(5 Weeks)**

• कविता, गीत, लघु कथा
• हास्य - व्यंग्य लेखन,
• पल्लवन, संक्षेपण , अनुच्छेद

Practical component (if any) – **(15 Weeks)**

• कक्षा में प्रत्येक वि द्यार्थी द्वारा 'मेरी पहली रचना'शीर्षक से किसी भी विधा में लेखन
• किसी भी साहित्यिक रचना का भाषा की दृष्टि से विश्लेषण
• इकाई- 3 में उल्लिखित विधाओं में विद्यार्थि यों द्वारा लेखन एवं सामूहिक चर्चा
• प्रत्येक इकाई से संबन्धि त परि योजना कार्य:

i. समसामयिक विषयों पर किसी भी विधा में लेखन – बदलते जीवन मूल्य, महामारी, राष्ट्र निर्माण में छात्र की भूमि का, युवाओं के कर्तव्य, पर्यावरण संरक्षण, लोकतन्त्र में मीडिया की भमि का, ऑनलाइन शॉपि गं अथवा अन्य समसामयिक विषय

ii. कि सी उत्सव, मेला, प्रदर्शनी, संग्रहालय और कि सी दर्शनीय स्थल का भ्रमण तथा उस पर परियोजना कार्य

• प्रिटं माध्यम के खेल, राजनीति , आर्थिक और फिल्म जगत आदि से जड़ु ी सामग्री का भाषा की दृष्टि से विवेचन
• इलेक्ट्रोनि क माध्यम के समाचार, धारावाहिक, वि ज्ञापन आदि का भाषा की दृष्टि से विवेचन
• आवश्यक हो, तो छात्र प्रोजेक्ट रिपोर्ट के रूप में अपने अनुभव साझा करें

- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- **लेखन एक प्रयास, हरीश चन्द्र काण्डपाल**
- **रचनात्मक लेखन, सं. रमेश गौतम**
- **साहित्य – चितंन: रचनात्मक आयाम, रघवुश**

Suggested readings

- अग्नि की उड़ान, अबुल कलाम आज़ाद
- टेलीवि जन की भाषा - हरीश चन्द्र बर्णवाल, राधाकृष्ण प्रकाशन, नई दिल्ली
- छोटे पर्दे का लेखन, हरीश नवल
- काव्यभाषा : रचनात्मक सरोकार, प्रो. राजमणि शर्मा
- कविता रचना प्रक्रिया, कुमार विमल

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

विकास गुप्ता
16/9/22
REGISTRAR

UNIVERSITY OF DELHI

CNC-II/093/1(23)/2022-23/
Dated: 21.03.2023

N O T I F I C A T I O N

Sub: Amendment to Ordinance V

(Ref: EC Resolution No. 18-1-20 dated 18.08.2022)

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This is in continuation to the Notification No. CNC-II/ 093/1(22)/2022-2023/197 dated 14.09.2022 regarding the list of Value Addition Courses offered under UGCF-2022.

The distribution of Lecture, Tutorial & Practical (L-T-P) of the Course titled "Digital Empowerment" is now being changed from 1-0-1 (L-T-P) to 0-0-2 (LTP) alongwith some minor changes for better teaching learning outcomes. The revised syllabus is given below:

Value Addition Course

Digital Empowerment

Course Title and Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Prerequisite of the Course
		Lecture	Tutorial	Practical/Practice		
Digital Empowerment	02	0	0	2	Pass in Class 12th	NIL

COURSE OBJECTIVES:

- Understand the digital world and need for digital empowerment
- Create awareness about Digital India.
- Explore, communicate and collaborate in cyberspace.
- Imparting awareness on cybersafety and security.

LEARNING OUTCOMES:

After the completion of the course, students will be able to

- Use ICT and digital services in daily life.
- Communicate and collaborate in cyberspace using social platforms, teaching/learning tools.

- Understand the significance of security and privacy in the digital world.
- Recognise ethical issues in the cyber world.

Syllabus for Digital Empowerment	Practical /Practice Hours (30×2=60)
Unit I: Digital inclusion and Digital Empowerment	**20**
• Needs and challenges • Vision of Digital India: DigiLocker, E-Hospitals, e-Pathshala, BHIM, e-Kranti (Electronic Delivery of Services), e-Health Campaigns • Public utility portals of Govt. of India such as RTI, Health, Finance, Income Tax filing, Education	
Unit II: Communication and Collaboration in the Cyberspace	**16**
• Electronic Communication: electronic mail, blogs, social media • Collaborative Digital platforms • Tools/platforms for online learning • Collaboration using file sharing, messaging, video conferencing	
Unit III:Towards Safe and Secure Cyberspace	**16**
• Online security and privacy • Threats in the digital world: Data breach and Cyber Attacks • Blockchain Technology • Security Initiatives by the Govt of India	
Unit IV: Ethical Issues in Digital World	**8**
• Netiquettes • Ethics in digital communication • Ethics in Cyberspace	

Note: Concepts are to be taken up during the practical/practice hours.

Practical/ Practice Component (30 sessions of 2 hours each= 60 hours)

The course should be conducted in an interactive mode through demonstration, using appropriate tools.

- Conduct workshops on e-services initiated under Digital India.
- Spread digital literacy/awareness amongst the vulnerable groups and marginalised sections of the society like street vendors, domestic help, security guards, senior citizens.
- Students will take up team activities/ projects exploring digital services in the areas such as education, health, planning, farming, security, cyber security, financial inclusion, and justice, e-Kranti.
- Any other Practical/Practice as decided from time to time

Essential Readings /Online Resources

1. Rodney Jones and ChristophHafner. "Understanding digital literacies: A practical Introduction". Routledge Books, 2nd edition, 2021.
2. https://www.digitalindia.gov.in
3. https://www.digilocker.gov.in
4. https://www.cybercrime.gov.in
5. https://www.cybersafeindia.in
6. https://www.meity.gov.in/cyber-surakshit-bharat-programme

Suggested Readings:

1. David Sutton. "Cyber security: A practitioner's guide", BCS Learning & Development Limited, UK, 2017.
2. https://www.mha.gov.in/document/downloads/cyber-safety-handbook

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

REGISTRAR

UNIVERSITY OF DELHI

CNC-II/093/1/EC-1273/25/
Dated: 17.02.2025

NOTIFICATION

Sub: Amendment to Ordinance V

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

The Syllabi of the following new Value Addition Courses approved by the Executive Council in its meeting held on 17.01.2025 vide ECR No. 38-29, based on Undergraduate Curriculum Framework 2022 implemented from the Academic Session 2022-2023, are notified herewith for the information of all concerned:

(i) The Gita for Holistic life
(ii) Leadership Excellence through the Gita
(iii) The Gita for sustainable Universe
(iv) The Gita: Navigating Life Challenges
(v) Envisaging Viksit Bharat: Perspectives and Challenges
(vi) The Science of Happiness

The details are at ***Annexure-1.***

REGISTRAR

The Gita for Holistic Life

Course title & code	Total Credits	Credit distribution of the course			Eligibility Criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/Practice		
The Gita for Holistic Life	02	1	0	1	Pass in Class 12th	NIL

Course Objectives

1. To illustrate the values from the Bhagavad Gita contributing to a holistic life: physical, psychological, social and spiritual
2. To help students relate to the wisdom in the Gita for overcoming challenges
3. To develop clarity, purpose and achieve goals

Learning Outcomes:

1. Understand the core teachings and principles of the Gita for a holistic life.
2. Analysis of the concepts of *Dharma*, *Karma*, and *Yoga*.
3. Apply the teachings of the Gita in practice
4. Develop leadership and decision-making skills.

	Lectures
UNIT I **Gita –Mentoring Your Life**	**4**
• Know Thyself- Holistic Development (Panchakosha) • Directing the Mind towards Dharma and Karma • Cultivating values for a blissful life – Yoga (*Yogah karmasu kaushalam*), State of Equanimity (*Samattva yoga*), Equipoise (*Sthitapragya*) o	
UNIT II • **Self-Management**	**4**
1. Qualities – *Satvika, Rajasika* and *Tamasika*, Good and bad conduct, (*Daivi-Asuri Sampat*) 2. Modes of learning–*Shravana* (Listening), *Manana* (Reflection and questioning), *Nididhyasana* (Assimilation of Knowledge) 3. The field of action: Family and society o	
UNIT III • **Dilemmas of Contemporary life**	**4**
1. Modern Day Arjuna 2. Finding Krishna - Friend, Philosopher and Guide 3. Journey to Self-Discovery	
Unit IV • **Three Modes of Navigation**	**3**
• Action (Karmayoga), • Knowledge (Jnanayoga) • Devotion (Bhaktiyoga)	

Practical/Practice Component **(15 sessions of 2 hours each = 30 hours)**

1. Observe your friend in terms of health, behaviour, nature, intelligence and happiness. Using Panchakosha theory, suggest ways to bring improvement in the required area/s.
2. Discuss in class your Dharma as a student as well as a human being.
   i. Enlist ten daily activities that would lead you achieve your Dharma.

ii. Make a list of your activities on a given day. Classify them as conducive or obstructive in your pursuit of your dharma.

3. Conduct a SWOC analysis for yourself and enlist best five of your Strengths, Weaknesses, Opportunities and Challenges. Also, suggest action plan to convert your weaknesses into strengths and to deal with the challenges in next 10-15 days.
4. Practice pranayama for 10-15 minutes daily for ten days or devote yourself to working for a selfless action for half an hour daily for ten days.
   i. Note your changes in your levels of patience, concentration and behaviour before and after the practice.
   ii. Share your experiences in an audio-visual presentation of about 5-10 minutes.
5. Make a list of the prominent qualities of your role model/friend. Classify these qualities as *Sattvika, Rajasika* or *Tamasika*.
6. Perform a role-play of Krishna-Arjuna dialogue in pairs, discussing dilemmas of contemporary life and your *dharma* in different situations.
7. Prepare a case study of yourself as a person facing the dilemmas of ethics, values and *dharmas*. Suggest the best possible action plan for yourself.
8. Students are required to watch documentaries and films on the subject-related topics.

Any other Practical/Practice as decided from time to time. i

Note: Teachers may use the following verses of the Gita to facilitate unit-wise discussions in the classroom

(Unit 1)
1. Ch.2.19; 3.42
2. Ch.2.31, 38-39, 47-48
3. Ch.2.48, 50, 54-59

(Unit 2)
1. Ch.16.1-5
2. Ch.6.3
3. Ch.3.18-19

All references pertain to *SrimadbhagavadgitaSankaraBhasya* (Hindi), Gita Press, Gorakhpur.

Essential Readings

1. *Essence of the Bhagavad Gita*: A contemporary Guide to Yoga, Meditation and Indian Philosophy by Eknath Easwaran, Nilgiri Press, 2011, pg. 76-115, 134-49, 150-172, 173-218, 415-420, 476-500.
2. *SrimadbhagavadgitaSankaraBhasya* (Hindi), Gita Press, Gorakhpur.
3. *SrimadbhagavadgitaRahasaya*: B.G. Tilak, Tilak Brothers Publication, Poona.
4. *Essays in the Gita*: Sri Aurobindo, Sri Aurobindo Ashram, Puducherry.
5. *The Gita in the Light of Modern Science*: R.B.Lal, Somaiya Publication, Bombay
6. https://ndl.iitkgp.ac.in/ndl_he
7. श्रीमद्भगवद् गीता (साधक हिन्दी टीका), Gita Press, Gorakhpur

8. The Bhagavadgītā Or The Song Divine (With Sanskrit Text and English Translation) Gita Press, Gorakhpur

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

Leadership Excellence Through the Gita

Course title & code	Total Credits	Credit distribution of the course			Eligibility Criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/Practice		
Leadership Excellence Through the Gita	**02**	**1**	**0**	**1**	**Pass in Class 12th**	**NIL**

Course Objectives

1. To demonstrate how Bhagavat Gita conceptualizes leadership and its role in developing the self and society
2. To build skills and competencies for leadership excellence
3. To illustrate the importance of righteousness, ethics and compassion through the wisdom of Gita

Learning Outcomes

1. Analysis of one's strengths and weaknesses as a leader (SWOC of Self)
2. Develop leadership techniques
3. Becoming ethical and compassionate leaders
4. Identify the qualities of a responsible leader

Syllabus of *Leadership Excellence Through the Gita*

	Lectures
UNIT 1- Decoding Leadership through Gita	5
• Defining the role of a leader in terms of *Dharma, Adharma* and *Arajkata* and *Loksangrah* • Understanding the nuances of *Dharma*: Concept of *Swa-Dharma, Ashrama-Dharma* and *Apad-Dharma* (Extraordinary situations): Rights and Responsibilities • Excellence in a leader –Concepts of *Karma, Vikarma* and *Akarma*	
• UNIT 2: Developing Leadership Qualities	4
• Leader a *Karmayogi:* Aspirational, Focused, Compassionate and Equanimous • *Triguna* model: *Sattva, Rajas, Tamas* • Nurturing excellence in leadership by: a. Reducing *Tamas* b. Balancing *Rajas* c. Increasing *Sattva*	
UNIT III Ethical and compassionate Leadership	3
• *Yajna* – Give back to nature • *Dana* – Give back to Society • *Tapas*- Remove weakness in self	
Unit IV Case Studies of Leaders from Modern Bharat	3
• Lessons from life – Swami Vivekanand, Gandhi, APJ Abdul Kalam, Ratan Tata	

Practical/Practice Component **(15 sessions of 2 hours each= 30 hours)**

- Students will do a SWOC (Strength, Weakness, Opportunity and Challenges) analysis of their personality as a Leader. Make a list of Opportunities (O) available to you for nurturing excellence in leadership.

- Students will share a story with the class when in a difficult situation they took responsibility and displayed excellence as a leader.

- Based on *Dharma* and *Swadharma* concepts students will make a list of the rights and responsibilities associated with them at the level of Self and Family.

- As a youth how can you contribute towards the wellbeing of your community /campus (*lokasangrah).*

- Sit in a group and discuss: (a) what are the *Tamasik* behaviors that you and your friends have and would like to reduce.

- What changes can you make in your lifestyle (diet, habits and activities) to increase *Satwik guna* in your personality.

- Practice Single Pointedness and Focus: Sit with your eyes closed and focus your attention unwaveringly on one particular sound that is there in your immediate environment.
- Keep your attention on your breath while breathing in and breathing out. Do this 20 times (10 rounds). This will develop stability of the mind and balance emotions.

- Plan some activities for the wellbeing of the campus which you as a student (or part of team) can do voluntarily to inculcate the spirit of *yajna (Sewa).* OR to practice the attitude of *tapasya* take up a project for the good of others and work on it without expecting rewards with full dedication for a few months.

- Find ways of developing an attitude of *dana.*

- Make a timetable for yourself for the next three months showing the things that you will do to develop your leadership skills.
- Any other Practical/Practice as decided from time to time by the teacher

Essential Readings

1. *The Message of the Gita as interpreted by Sri Aurobindo*. Shri Aurobindo Ashram Publication Department, Pondicherry
2. The Bhagawad Geeta Chapter XVIII by Swami Chinmayananda. Central Chinmaya Mission Trust, MUMBAI.
3. Talks on the Gita by Vinoba Bhave https://www.mkgandhi.org/talksongita/talk_gita.php
4. Essays on The Gita by Shri Aurobindo. Shri Aurobindo Ashram Publication Department, Pondicherry.
5. The Bhagavad Gita for Daily Living. Eknath Easwaran. Vols I, II & III. Jaico Publishing House
6. Bhagavad-gita (with Vaishnava commentaries) by Narayana Gosvami, MLBD, 2013
7. श्रीमद्भगवद् गीता (साधक हिन्दी टीका), Gita Press, Gorakhpur
8. The Bhagavadgītā Or The Song Divine (With Sanskrit Text and English Translation) Gita Press, Gorakhpur

Suggested Readings

1. From *The Bhagavad Gita for Daily Living* by Eknath Easwaran. Vols I, II & III. Jaico Publishing House
    - Dharma & Swadharma. Pages 196 & 197; Slokas 35,36 &38 (Chapter 3)
    - Karma, Vikarma & Akarma Pages 245,24, & 247; Slokas 16,17&18, (Chapter 4)
2. From *The Bhagawad Geeta, Chapter XVIII* by Swami Chinmayananda. Central Chinmaya Mission Trust, MUMBAI.

- The Triguna theory - Satwik, Rajasik , Tamasik Gunas
    - Three types of Karma- Page 46, Sloka 23, 24, & 25 (Chapter 18)
    - Three types of Actors- Page 52 Sloka 26, 27, 28 (Chapter18)
    - Three types of Bhuddhi- Page 60, Sloka 30,31, & 32 (Chapter 18)
    - Three types of Dhriti- Page 66, Slokas 33,34 &35 (Chapter 18)
    - Three types of Happiness- Page 72, Slokas 36,37&3 (Chapter 18)

- Varna Ashram, Pages 88,89, & 90 Sloka; 41,42, & 43 (Chapter 18)

3. From *Talks on the Gita* by Vinoba Bhave

   https://www.mkgandhi.org/talksongita/talk_gita.php

   - Karmayogi. Pages 37-45 (Chapter 3)
   - *Yajna, Dana & Tapasya*. Pages 229, 230 & 231; Sloka 11 to 26 (Chapter 17)

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

The Gita for Sustainable Universe

Course title & code	Total Credits	Credit distribution of the course			Eligibility Criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/Practice		
The Gita for Sustainable Universe	02	1	0	1	Pass in Class 12th	NIL

Course Objectives

1. To sensitise students about creation and nature.
2. To analyse the idea of sustainability from the perspective of Bhagavad Gita
3. To establish the relationship between human beings and environment.
4. To explore strategies for a sustainable universe

Learning Outcomes

1. Develop insights on the value of sustainability
2. Analyse the elements that contribute to creation and regeneration
3. Formulate ways and means to make the universe sustainable

	Lectures
UNIT I **Gita for a *Sandharaniya Vishva***	**4**
• *Sat* - The timeless and universal concepts from Gita • The Ecological Consciousness reflected in Gita • Destruction of Nature – the consequence of Human ignorance, greed and ambitions	
UNIT II • ***Prakriti* - the Manifestation of Divine Energy**	**4**
1. *Pancha-mahabhutas* - The building blocks of Universe 2. *Triguna* – the diversity in nature 3. *Prakriti* – co-relating the external and internal	
UNIT III • ***Prakriti* – The Provider of Resources**	**3**
• *Prakriti* and its gifts to humankind • Reciprocity between *Devata* (Powers of Nature) and *Yajna* (Human Action) • *Dharma* - Humankind's selfless duty to serve and conserve nature	
Unit IV • **Inculcating Values for Sustainability**	**4**
• Yoga – Way to discipline self and maintain balance • Experiencing Oneness with nature • *Samattvam yoga* - sharing and using natural resources judiciously • Managing the Ecological Footprint	

Practical/Practice Component **(15 sessions of 2 hours each= 30 hours)**

1. Discuss and develop an ecological conservation model on the basis of the Gita.
2. Prepare a video presentation/picture gallery to demonstrate the impact of human beings' interference with the nature.

3. Compare the different entities around you e.g. stone, plants, water, air, etc in terms of the proportion of *Pancha-Mahabhutas* in them. Enlist the characteristics of each *Mahabhuta*.
4. Work in group for one hour everyday to make the earth a better place to live. Present your work through audio-visual presentation.
5. Discuss in class your *Dharma*, as a student as well as a human being, to ensure ecological balance on earth
   i. Enlist ten daily activities that would lead you achieve your *Dharma*.
   ii. Make a list of your activities on a given day. Classify them as conducive or obstructive in your pursuit of your *dharma*.
6. Perform a role-play of Krishna-Arjuna dialogue to create awareness of ecological balance.
7. Students are required to watch documentaries and films on the subject-related topics.

Any other Practical/Practice as decided from time to time.

Note: Teachers may use the following verses of the Gita to lead the class discussions unit wise.

(Unit I)
1. 17.26-27
2. 7.4-10, 13.17
3. 2.62-63, 3.12

(Unit II)
1. 13.6
2. 14.5-9
3. 14.4

(Unit III)

1. 3.10-11
2. 3.12-15
3. 3.9-16

(Unit IV)

1. 5.27-28, 6.3, 11-21
2. 11.16, 39
3. 2.48; 17.16

All references have been taken from *SrimadbhagavadgitaSankaraBhasya* (Hindi), Gita Press, Gorakhpur.

Essential Readings

1 Padhy Sachidananda. Ethno-ecological introspection into Bhagawatgeetaa: Principles and components of the ecosystem. J Hum Ecol, 2013, 42(3): 203-209.

2 Padhy Sachidananda. Ethno-ecological introspection into Bhagawatgeetaa: Ecological responsibility of human beings. J Biodiversity, 2013, 4(2): 79-82.
3 Padhy Sachidananda. Ethno-ecological introspection into Bhagawatgeetaa: 5. Guna (Quality): The metaphysical factor of nature, responsible for diversity. J Hum Ecol, 2014, 45(3): 177-182.
4 https://ndl.iitkgp.ac.in/ndl_he
5 Essence of the Bhagavad Gita: A contemporary Guide to Yoga, Meditation and Indian Philosophy by Eknath Easwaran, Nilgiri Press, 2011
6 SrimadbhagavadgitaSankaraBhasya (Hindi), Gita Press, Gorakhpur.
7 SrimadbhagavadgitaRahasaya: B.G. Tilak, Tilak Brothers Publication, Poona.
8 The Gita in the Light of Modern Science:R.B.Lal, Somaiya Publication, Bombay.
9 श्रीमद्भगवद् गीता (साधक हिन्दी टीका), Gita Press, Gorakhpur
10 The Bhagavadgītā Or The Song Divine (With Sanskrit Text and English Translation) Gita Press, Gorakhpur

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

The Gita: Navigating Life Challenges

Course title & code	Total Credits	Credit distribution of the course			Eligibility Criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/Practice		
The Gita: Navigating Life Challenges	**02**	**1**	**0**	**1**	**Pass in Class 12th**	**NIL**

Course Objectives

- To explore the universal principles of the *Bhagawad Gita* and their relevance to modern life challenges across cultural backgrounds
- To develop self-awareness and the spirit to overcome obstacles in personal and professional lives
- To empower students to cope with problems and dilemmas

Learning Outcomes

- Analyse different stages of self-knowledge identified in the Gita
- Relate solutions provided in the Gita to personal and academic challenges
- Develop a resilient approach to life by embracing values such as equanimity, compassion, and self-awareness.
- Demonstrate improved stress management and mindfulness practices inspired by the Gita's guidance

Syllabus of *The Gita: Navigating Life Challenges*

	Lectures
UNIT I • **The Context of the Bhagawad Gita**	**4**
○ Understanding the universal relevance of the Gita ○ Doubts, fears, apathy and dilemmas as stepping stones to growth and evolution: Arjuna's dilemma and Krishna's guidance ○ Practical tools for self-awareness, acceptance and the desire to make an effort (*krta sadhya)* to overcome ○ How to act without attachment to the outcome (*Nishkama Karma*)	
UNIT II • **Challenges for the Life Ahead**	**4**
○ Navigating Career Dilemmas and Indecisiveness ○ Unhealthy Competition and Peer Pressure ○ Poor Self-Esteem and Self-Doubt: *Who am I?* ○ Self-discovery and reflections on the concept of *Swadharma*	
UNIT III • **Managing Stress and Negative Emotions**	**4**
○ Aggression, Conflicts and Stress ○ Addiction to Substances and Digital Media ○ The Gita's teachings on equanimity: Responding to both success and failure ○ Managing *Sattvika, Rajasika* and *Tamasika Gunas*	
Unit IV • **The Quest for Balance**	**3**
○ The practice of *Yoga – Yama, Niyama, Pranayama* and meditation (*Pratyahara, Dhyana, Dharana*) as tools for achieving balance. ○ The qualities of *Sthitapragya* – the joyful, energised and purposeful state of being	

Practical/Practice Component **(15 sessions of 2 hours each= 30 hours)**

- Students can maintain a journal detailing some of the immediate academic and personal dilemmas they are facing, and attempt to integrate the class discussions on the Gita to those issues
- Students may attempt to write a commentary on any section/verses of the Gita, providing their own interpretation.
- An interesting activity in the form of group discussion can relate around the theme of conflict resolution. Each group can be given a case study.
- Students may be asked to think/write about whom they approach for advice.
- Some practical sessions can be devoted to students trying to discover their *swadharma.* What work would give them joy?
- Meditation exercises
- Any other Practical/Practice as decided from time to time by the teacher

Note: Teachers may use the following verses of the Gita to facilitate unit-wise discussions in the classroom.

Unit 1
Chapter 2, Verse 47

Unit II
Chapter 18, Verse 14
Chapter 6, Verse 5
Chapter 18, Verse 45

Unit III
Chapter 16, Verse 2
Chapter 2, Verse 62-63

Unit IV
Chapter 6, Verse 6

The Bhagavadgītā or The Song Divine (English) Gita Press, Gorakhpur **OR** श्रीमद्भगवद् गीता (साधक हिन्दी टीका), Gita Press, Gorakhpur (Hindi) can be consulted for the above references

ESSENTIAL READINGS

1. श्रीमद्भगवद् गीता (साधक हिन्दी टीका), Gita Press, Gorakhpur (as specified in the Note above)
2. **The Bhagavadgītā Or The Song Divine (With Sanskrit Text and English Translation)** Gita Press, Gorakhpur ((as specified in the Note above)

3. Essence of the Bhagavad Gita: A contemporary Guide to Yoga, Meditation and Indian Philosophy by Eknath Easwaran, Nilgiri Press, 2011; pp. 23-32, 105-128, 147-166
4. Swami Chinmayananda, (1996), "Holy Geeta", Central Chinmaya Mission Trust, Mumbai pp. 2-13

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

Envisaging Viksit Bharat: Perspectives and Challenges

Credit Distribution, Eligibility and Pre-requisites of the Course

Course title & code	Credits	Credit distribution of the course			Eligibility Criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/Practice		
Envisaging Viksit Bharat: Perspectives and Challenges	02	1	0	1	Pass in Class 12th	NIL

Course Objectives

The objectives of the course are:

1. Familiarise the youth with the concept of Viksit Bharat
2. Identify the pillars to shape India into a Viksit Bharat
3. Respond to the challenges and expectations of Viksit Bharat
4. Understand the dynamics of transformation

Learning Outcomes

After completing the course, the student shall be able to:

- Comprehend the vision and perspective of Viksit Bharat
- Understand different aspects of Indian economy and society
- Analyse dimensions for inclusive and sustainable Bharat
- Instil a sense of national pride and optimism in one's own life

Unit 1: Viksit Bharat @2047: A Determination **(3 hours)**

- Concept of Viksit Bharat
- Indian perspective of Development
- *Sarve Bhavantu Sukhinah*

Unit 2: Transforming the Nation **(4 hours)**

- PM Gati-Shakti National Master Plan
- Energy: Conventional and Non-Conventional
- Digital Transformation
- E-Governance

Unit 3: Empowering Farmers and Youth **(4 hours)**

- Increasing Farmers Income: Strategies and Challenges
- Non-Farm Rural Sector

- Manufacturing Sector
- Start-ups and Entrepreneurship

Unit 4: Sustainable and Inclusive Bharat **(4 hours)**

- SDGs and Climate Challenges
- Women led Development
- India as a Soft Power
- *Shiksha se Sarvodaya*

Practical Components **(15 sessions of 2 hours each = 30 hours)**

Field Activities/ Practical and Hands-On Components

Regular class activities must be conducted throughout the course to enhance students' understanding of topics and the application of concepts. The case study method may be followed as a teaching pedagogy.

After the introductory class (first unit), Off-campus visit(s) should be scheduled to places like MSME, village, Self-Help Groups, Farmers Organisations, Infrastructure Projects, Industries, Weekly Bazars etc. The purpose of such visits is to begin the curriculum with real-life experiences. Students should be guided to observe and experience the real-world happenings and search for improvement opportunities. Suitable pedagogy for off-campus visits: Observation, Prototyping, Experimentation, Testing, Selection, and Communication.

After the completion of second unit, a group project activity is to be given to apprehend the practical application of the concepts. It may include finding a problem in the industry/villages/infrastructure projects, observe how the initiatives of Viksit Bharat may be applied, finding gaps and recommendations for effective implementation of the policies.

After the completion of fourth unit, group projects are to be allotted to cognize students' understanding and make them competent to apply the philosophy of Viksit Bharat in real-life situations.

Essential Readings:

1. Rao, T C (2024) *The Architects of Viksit Bharat,* Prabhat Prakashan, New Delhi.
2. Kumar, S. (2023) Development Strategy for Future India and Atmanirbhar Bharat: A Way forward, *Contemporary World Economy Journal*, 1(4)
3. Vashisht Sunil, Ed. (2021) *Atma Nirbhar Bharat: Towards a Self-Reliant India*, Prabhat Prakashan, New Delhi.
4. Gupta, Arvind and Gurumurthy, S. (Editors) (2021) *Aatmanibhar Bharat: A Vibrant and Strong India*, Aryan Books International, New Delhi

5. Khanna, Shrey and P. Moorthy (2017), Analysing India's Soft Power Functioning in the Twenty-first Century, India Quarterly, September 2017, Vol. 73, No. 3, pp. 292-311.
6. Government of India (2023) *Economic Survey 2023*, New Delhi

Suggested Readings

1. Sarukkai, Sundar (2021), Self-reliant India: Self of Nation or National Self? *Journal of Social and Economic Development*, 23, pp. 357 – 365.
2. Govt. of India (2021), Innovation: Trending up but needs Thrust, especially from the Private Sector, *Economic Survey* (2020-21) Vol.1, Ch. 8.
3. Arora, Ashish and Surendra Kumar Bagde (2011), Private Investment in Human Capital and Industrial Development, in K.G. Dastidar, H. Mukhopadhyay and U.B. Sinha (Eds.) *Dimension of Economic Theory and Policy: Essays for Anjan Mukherji*, Oxford University Press, London.
4. Viswanathan, H. H. S. (2019), India's Soft Power Diplomacy, Indian Foreign Affairs Journal, Vol. 14, No. 2, pp. 129-136.

Examination scheme and mode: Subject to directions from the University of Delhi from time to time

Value Addition Course

The Science of Happiness

Course title and Code	Credits	Credit Distribution of the course			Eligibility Criteria	Prerequisite of the course
		Lecture	Tutorial	Practical/Practice		
The Science of Happines:	02	1	0	1	Pass in Class 12	NIL

Course Objectives

To understand the concepts of happiness scientifically and provide them with basic training on how to improve the quality of their life as well as those of others.

To inculcate the practice of happiness by focusing on strengths that enhance positive emotions and positive relationships, thus preparing them for excellence.

To foster well-being by developing insights about oneself and awareness about others.

To attempt to use 'happiness' as a driver of innovation & as a social quality for community growth and connection with each other.

Learning Outcomes

At the end of the course:

Students will be able to transform themselves by realizing their innate potential and finding their purpose in life.

Students will be able to scientifically understand and develop a sense of well-being.

Students will develop the ability to understand the complexities of life and explore ways to effectively deal with them.

It will encourage students to build a genuine connection and relationship with others, resulting in sustained strength and happiness.

Syllabus

Unit 1: Framing Happiness	Lectures
The importance of different emotions Introducing the different perspectives of happiness Why happiness – Introductory issues Happiness myths and misconceptions Understanding negative emotions	4 hours
Unit 2: Neuroscience of Happiness	
Neuroscience and happiness Brain-behaviour relationship Measuring happiness	3 hours
Unit 3: Happiness in everyday life	

Importance of empathy and gratitude Toxic Positivity & Shades of Optimism Relationships & Well-being Flow and Creativity	**4 hours**
Unit 4: Resilience and Happiness	
Coping with negative emotions Nurturing skills, values, and mindset for Resilience Critical issues behind happiness	**4 hours**

Practical/ Practice Component

Along with conceptual and scientific explanation, this course will also introduce practices and encourage experimentation in how to live a happier life. Research shows that increasing our own well-being takes daily, intentional effort over long periods of time. Each week, students will be assigned a set of "unlearning" and 'relearning' practices. These practices aim at unlearning negative mindset and will help to boost overall wellbeing. During the course, the students will also be assigned mini projects as below along with the experiments to explore happiness in daily living.

- Mindlab experimentation- Demonstration of brain waves through EEG using any intervention and detecting the stress levels through biofeedback instruments. This will enable students to empirically comprehend the impact of positive or negative affect on one's physiological function.
- Signature Strengths and Measuring Happiness- How to measure happiness and determine your signature strengths using validated psychological instruments.
- Savoring & Gratitude Journal- Gratitude is a positive emotional state in which one recognizes and appreciates what one has received in life. Research shows that taking time to experience gratitude can make you happier and even healthier. Students will be encouraged to create a journal by picking one experience to truly savor and are grateful for each day. Additionally, students will be asked to perform micro acts of kindness, connect with someone they care about beyond what they would normally do.
- Exercise & Sleep- Research shows that a few minutes a day of exercise and proper sleep can improve mood more than we often expect. Students will be asked to keep track of both their exercise routine and sleep viz their daily moods.

Essential Readings

Lipton, Bruce H. The biology of belief 10th anniversary edition: Unleashing the power of consciousness, matter & miracles. Hay House, Inc.

Handel, D. (2012). The Science of Happiness: How Our Brains Make Us Happy and What We Can Do to Get Happier by S. Klein: (2006). Cambridge, MA: Da Capo Press, 289 pp., $15.95 (paperback), ISBN: 9781921215148.

Lyubomirsky, S. (2008). The how of happiness: A scientific approach to getting the life you want. Penguin.

Suggested Readings

A compass towards just and harmonious society - Centre for Bhutan Studies (can be downloaded online)

Laugh your way to happiness - Lesley Lyle

Buddha Body Buddha Mind - Thich Nhat Hanh

Seven Effective Habits - Stefan F Covey

Stumbling on Happiness - Daniel Gilbert

Flourish - Martin P. Seligman

Examination scheme and mode: Subject to directions from the University of Delhi from time to time