

References:

1. *Introduction to Indian Knowledge System: Concepts and Applications*, B. Mahadevan, V R Bhat, Nagendra Pavan R N, PHI Learning Pvt Limited, 2022.
2. *Ancient Hindu Science: Its impact on the Ancient and Modern worlds*, Alok Kumar; Jaico Publishing House, 2019.
3. *Aryabhataiya of Aryabhat* by K.S. Shukla and K.V. Sarma, Indian National Science Academy, New Delhi (1976)

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

Generic Electives (GE):

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 Public Health: Infection to Informatics (GE)	4	2	0	2	12 th Pass	Nil

Learning Objectives

The course introduces students to the fundamentals of Public Health with reference to Infectious Diseases and Informatics. The Covid-19 pandemic has taught us the importance of having a good public health system and this course will prepare the future generation for a better understanding of the threats of zoonotic diseases and corresponding public health measures. Apart from theoretical background in Zoonotic diseases, infectious diseases prevalent in our country, this course will delve into the fundamentals of outbreaks and infection through case studies, data analysis and health informatics.

Learning Outcomes

This course enables students to become responsible and aware citizens and to act promptly and systematically in future outbreaks and epidemics. Upon completion of the course the students would be able to:

- Understand the differences of Outbreak, Endemic, Epidemic and Pandemic
- Prepare themselves and the society for better awareness of Public Health system and Disaster Management responses
- Understand how Drugs and Vaccines are created and Clinical Trials are designed
- Learn the basics of health informatics and analysis of public health data
- Access and Analyse Public Health datasets
- Create relevant Citizen Science projects on Public Health
- Create Posters, fliers and Advertisements for Awareness and preventing misinformation.

Keywords: Public Health, Zoonotic Disease, Drugs and Vaccines, Endemic, Epidemic, Pandemic, Epidemiology, Pathogens, Clinical Trial, Personalized Medicine.

SYLLABUS

Unit I: Understanding Outbreak, Endemic, Epidemic, Pandemic. Infectious Diseases and Lifestyle Diseases. (4 hours)

Unit II: Zoonotic diseases, Pathogens (viruses, bacteria, parasites and fungi) and Infection Process, Epidemiology, Disaster Management, Biohazard and Bioweapons. (12 hours)

Unit III: Medicine and Vaccine, Introduction to Drug designing, Vaccine types, Clinical Trials, Trial Design, Personalized Medicine and Precision Medicine, Medical Terminology & Medical Ethics (8 hours)

Unit IV: Introduction to Public Health, Public Health Data Analysis, International Health Issues, Institutes of Public Health, Public health policy (8 hours)

Practical Components/Projects (60 hours)

- Case Studies of Outbreak, Pandemic. Designing Public Awareness Posters, fliers and Advertisement, Engaging with social media misinformation.
- Designing Health Survey and Disaster Management Awareness Survey. Creating Citizen Science Projects related to Public health and Zoonotic Diseases.
- Public Health dataset analysis, Searching and curating Databases, Experimental design for vaccine Preparation and Clinical trials.

References:

1. *Introduction To Public Health* Mary Jane Schneider, Jones and Bartlett Publishers, Inc; 6th edition, 2020.

2. *Oxford Handbook of Infectious Diseases and Microbiology* (Oxford Medical Handbooks) OUP Oxford; 2nd edition, 2016.
3. *Kuby Immunology*, WH Freeman; 8th ed. 2018.
4. *Spillover – Animal Infections and the Next Human Pandemic*. David Quammen, W. W. Norton & Company; 2012.
5. *Emergence of Zoonotic Diseases in India: A Systematic Review*. Dhiman RC, Tiwari A *Med Rep Case Stud* 3: 163. doi: 10.4172/2572-5130.1000163, 2018.
6. Changing patterns of infectious disease, Cohen, Mitchell L. *Nature*, Volume 406, pages 762–767, 2000.
7. *Manual on Zoonotic Diseases of Public Health Importance*. National Centre for Disease Control (<https://ncdc.gov.in/WriteReadData/1892s/File618.pdf>), 2016.
8. *Exploring the relationship between the emergence of zoonotic diseases and the inhuman touch of habitat loss and wildlife trade*. Tiwary, N. K., Singh, G., & Bhaduri, A. in *Multidimensional Approaches to Impacts of Changing Environment on Human Health* CRC Press, Taylor & Francis Group, 2022.
9. *Citizen Science Comes of Age*, Aisle Irvine, *Nature* 562, 480-482 (2018) doi: <https://doi.org/10.1038/d41586-018-07106-5>
10. *Citizen Science for Public Health*, Lea Den Broeder et al., *Health Promotion International*, Volume 33, Issue 3, Pages 505–514, 2018.

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Generic Electives (GE):

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Income Tax and Law Practice	4	3	0	1	PASS IN XII	NIL

Learning Objectives

This course aims to provide comprehensive knowledge of various heads of income and focuses on the computation of the total income and tax liability of an individual as per the Income Tax Act 1961.

Learning outcomes