- Analyse the model of full employment and use it to examine important macroeconomic issues, such as the extent to which taxes may depress economic activity and lower the level of GDP.

SYLLABUS

Unit I: The Economic Problem
Scarcity and Choice; Market economies and the price system; Variables, correlation and causation; Recommending appropriate policies [8 hours]
Unit II: The supply and demand model
Elasticity of supply and demand; Market equilibrium; Demand curve and behaviour of consumers; Supply curve and behaviour of firms [11 hours]
Unit III: Efficiency of markets
Rise and fall of industries; Monopoly; Antitrust policy; Taxes, transfers and income distributions [11 hours]
Unit IV: Macroeconomics
Unemployment, inflation and interest rates; Macroeconomic theory and policies; Measuring theoretical and actual GDP [15 hours]

Essential/recommended readings
- Principles of Economics, J.B. Taylor and A. Weerapana, Flatworld, 9th Edition, 2021.
- Principles of Economics, K. E. Case, R. C. Fair and S. C. Oster, Pearson Education, 13th Edition, 2019.
- Principles of Economics, N. G. Mankiw, Cengage, 9th Edition, 2021.

GENERIC ELECTIVES (GE-3.2.): Electronic Circuit elements and innovation lab

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	Department offering the course
		Lecture	Tutorial	Practical/ Practice			
GE 3.2.; Electronic Circuit Elements and Innovation Lab	4	2	0	2	Class XII pass	Mathematics till XII	Physics/ Electronics Faculty of CIC

Learning Objectives

This module involves interactive learning of A.C. fundamentals. It helps to understand the basic network analysis of electronic circuits. It also provides the interface to understand the working of

various electronic devices and its characteristics. Working of electronic instruments will also be understood.

Learning Outcomes

After completing this course, student will be able to;

- understand the concepts of AC fundamentals
- gain good knowledge of Network Analysis
- understand the basics of Diodes and Transistor based devices
- knowledge about instruments like CRO, Function Generator, Multimeter, etc.

SYLLABUS

Unit I: AC Fundamentals
Concept of voltage and current sources - KVL and KCL - Node voltage analysis and method of mesh currents - Network theorems [8 hours]
Unit II: Transistors
PN Junction: variants and applications - Bipolar Junction Transistor (BJT) biasing and amplifier design - Field Effect Transistor (FET) variants – FET biasing and amplifier design [6 hours]
Unit III: Structure and working of SCR. Structure and operation of LDR, Photo voltaic cell, Photo diode, Photo transitors & LED [8 hours]
Unit IV: Operational Amplifiers basics and practical circuits - Feedback and oscillator circuits - Voltmeters-Multimeters-Function generator- Cathode ray oscilloscope - Cathode Ray Tube [8 hours]

Practical component – [60 hours]

- Characteristics of PN junction and Zener diode filters
- Half wave rectifier.
- Full wave rectifier with 2 diodes.
- LC and Pi filters
- Full wave rectifier with 4 diodes (Bridge rectifier). Input, Output and Transfer characteristics of CE and CC Amplifier.
- Amplifiers and Oscillator characteristics.
- Characteristics of LDR, Photo-diode and Phototransistor.
- Transfer characteristics of JFET.
- Transfer characteristics of MOSFET (with depletion and enhancement mode)
- Characteristics of LED with three different wavelengths.
- Series voltage Regulator.
- Shunt voltage Regulator.
- Characteristics of Thermistor.

Essential/recommended readings

- Circuits and Networks - A. Sudhakar & Shyammohan S. Palli ,TMH, 2017
- Principles of Electronics- V.K. Mehta and Rohit Mehta, S Chand &Co, 2014