GOKHALE INSTITUTE OF POLITICS AND ECONOMICS

Deemed to be University u/s 3 of the UGC Act, 1956
PUNE 411004

B.Sc. (ECONOMICS)
COURSE STRUCTURE & SYLLABUS

B.Sc. (ECONOMICS)
4 YEAR PROGRAMME
COURSE STRUCTURE & SYLLABUS

Program Outcomes:

Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate /postgraduate program of study.

Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.

Critical thinking, Problem solving and Analytical reasoning: Capability to apply analytic thought to a body of knowledge; analyses and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories, philosophies.

Acquiring research-related skills, scientific reasoning and reflective thinking: A sense of inquiry and capability for asking relevant/appropriate questions; ability to recognize cause-and-effect relationships, define problems, formulate and test hypotheses, analyses, interpret and draw conclusions from data; ability to plan, execute and report the results of an experiment or investigation.

Self-directed lifelong learning: Capability to use ICT in a variety of learning situations; ability to work independently, identify appropriate resources required for a project; ability to acquire knowledge and skills, through self-paced and self-directed learning aimed at personal development.

Employability Options: All the programs prepare the students for job profiles that demand numerical, analytical, and problem-solving skills, such as financial management, market research, business planning, budgeting, resource allocation, etc.

The present curriculum goes with Course Outcomes-based Curriculum Framework (LOCF) for all its programs. The approach is envisioned to provide a focused, outcome-based syllabus with an agenda to structure the teaching-learning experiences in a more student-centric manner. The LOCF approach has been adopted to strengthen students' experiences as they engage themselves in the program of their choice. Each program vividly elaborates its nature and promises the outcomes that are to be accomplished by studying the courses. Our students became eligible for all competitive exams like SSC, Indian Administrators, Insurance sector, Data Analyst, Tourism, Environment Management, Bank PO's, Media, MNC, NGO, and to prepare them for start-ups. In short, each program prepares students for sustainability and life-long learning.

Program Specific Outcomes:

a) PSO 1: The program provides a firm basis for much of the advanced thinking and analytical skills in the Economics discipline.
b) PSO 2: It helps the student to learn the mathematical and statistical techniques necessary for a thorough understanding of the discipline
c) PSO 3: This program will make students familiar with economic theories and their relevance, statistical & quantitative techniques and applied research in a wide variety of fields within economics.
d) PSO 4: The program prepares students for sustainability and life-long learning. Our students became eligible for all competitive exams like SSC, Indian Administrators, Insurance sector, Data Analyst , Environment Management, Bank PO's, Media, NGOs and Think tanks an Government Research Institutes like NITI Aayog, RBI etc.

Pedagogy of this course:

a) Active learning by encouraging discussions in class.
b) Inculcating team spirit by providing activities to be done in groups.
c) Follow various modes of teaching, to help students adapt to different modes of work they will face post-graduation, to name a few, power point presentations, computer exercises etc.,
d) Games and other simulation exercises since working in strategic environment with software packages and languages is inevitable these days.
e) Encouraging to do literature review or to write summary of journal articles to keep them afloat with recent developments in the research frontiers.
f) Assignments are given to be able to apply theories to real-word examples.
g) Quizzes to have clarity of concepts.

Note: Various evaluation methods for students to develop different skills along the way.

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Course Code: C-01

Course Name: Introduction to Calculus for Economics

Course Outcomes:

a) To acquaint students with the basic building blocks of calculus (Module I)
b) To introduce to the students the concepts of differential calculus (Module II)
c) To familiarize students with the idea of thinking analytically about optimization (Module III)
d) To introduce the concept of integral calculus (Module IV)

Module I: An Introduction to Differentiation

The Derivative
Rules of differentiation,
Increasing and Decreasing Functions
The Chain Rule
Concavity
Convexity
The Mean Value Theorem,
L'Hospital's Rules,
Implicit Differentiation

Module II: Differential Calculus

Partial Differentiation,
Taylor's Theorem
Taylor series,
Maclaurin Series,
Exponential Series,
Taylor's theorem for several independent variables.
Applications of exponential and logarithmic functions

Module III: Optimization

Unconstrained optimization and applications
Single variable
Multivariate optimization
Local and global minima and maxima
Constrained optimization
The Lagrange Multiplier

Module IV: Integral Calculus

Calculus as the antiderivative
Area under the curve
Basic formulae
Definite Integrals
Integration by Parts
Integration by Substitution

Suggested Readings:

Books:

B. Thomas and R. L. Finney, 1998, Calculus and Analytic Geometry (9th Edition), Addison-Wesley/Narosa.

R. Courant and F. John, 1999, Introduction to Calculus and Analysis Volume-1, (Reprint of the 1st Edition), Springer Verlag, New York.

Robert G. Bartle and Donald R. Sherbert, 2002, Introduction to Real Analysis (3rd Edition), John Wiley and Sons.

Tom M. Apostol, Calculus Volume I, Second Edition, John Wiley and Sons Inc.

W. Rudin, 1976, Principles of Mathematical Analysis (3rd Edition), McGraw-Hill.

Course Code: C-02
Course Name: Introduction to Statistics (STATA/SPSS)
Course Outcomes:

a) To familiarize students with basic statistical tools and their applications (Module I)
b) To train students intensively in the building blocks of statistical concepts (Module II)
c) To introduce to them basic concepts and methods in probability theory and related areas (Module III)
d) To introduce to them the concept of, and some applications of, regression analysis (Module IV)

Module I: Basic Statistical Tools

Definition and Importance of Statistics
Types of Data: Nominal, Ordinal, Interval and Ratio Scale
Variables: Discrete and Continuous Variables
Case Study: Interpret Questionnaires
Basic Analysis of Data Types
Understanding the Difference Between Factors and Levels (in the Context of SPSS)
Construction of Tables (With One or More Factors and Levels)
Diagrammatic and Graphical Representation of Data (Bar Chart, Pie Chart)
Frequency and Cumulative Frequency Distribution and Their Applications
Histogram
Frequency Polygon
Frequency Curve
Ogives
Stem and Leaf Charts
Box Plot: Examples and Problems

Module II: Moments in Statistical Theory

Concept of Central Tendency and Its Measures
Partition Values
Dispersion and Relative Dispersion
Coefficient of Variation
Moments Up to Fourth Order and Their Measures, Uses and Limitations
Linking of Data, Their Graphs, Their Interpretations and Relevant Applications

Module III: An Introduction to Probability

Principle of Counting
Permutation
Combination
Sample Space and Events and Random Variable
Generating a Random Variable
Elements of Probabilities
Classical and Statistical Definition of Probability
Additive and Multiplicative Theorems of Probability
Conditional Probability and Bayes Theorem

Standard, Discrete and Continuous Distributions Such as Binomial, Poisson and Normal Distributions with Their Properties and Applications
Elementary Idea of Probability Mass Function
Probability Density Function and Distribution Function

Module IV: An Introduction to Regression
Bivariate Data: Scatter Diagram, Correlation, Regression Lines and Their Uses
Concept of Error in Regression
Principle of Least Square
Fitting of Linear Regression and Related Results

Suggested Readings:
Books:
Aczel, A. D., Sounderpandian, J., Saravanan, P., & Rohit, J., 2012, Complete Business Statistics (7th Edition), McGraw-Hill.
Andy Field, 2019, Discovering Statistics using IBM SPSS Statistics (4th Edition), Sage Publication
Wayne Winston, 2016, Microsoft Excel 2016 - Data Analysis and Business Modeling, Prentice Hall India.

Course Code: C-03

Course Name: Basic Financial Methods

Course Outcomes:

a) To familiarize students with basic concepts in financial theory (Module I)
b) To introduce to students the concept and the importance of time value of money (Module II)
c) To introduce to them the idea of the trade-offs between risk and return in finance (Module III)
d) To familiarize them with the theory of the bond markets (Module IV)

Module I: The Building Blocks of Financial Theory

What is Money?
What is Finance?
Difference Between Stock and Flow (Income, Wealth, Black Money, Investment)
Monetary Assets Vs Financial Assets
Financial Intermediaries
Financial Systems
Interface of Financial Management with Other Functional Areas
Basic Financial Statement Analysis: Balance Sheet Analysis, P&L Account
Ratio Analysis: Liquidity, Leverage, Turnover and Profitability Ratios

Module II: Time, Money and Value

Time Value of Money: Why the Time Value of Money
Simple Interest and Compounded Interest
Nominal and Real Rates of Interest
Future Value: Single Cash Flow, Multiple Cash Flows and Annuity
Present Value: Single Cash Flow, Multiple Cash Flows and Annuity
Growing Annuity
Perpetuity and Growing Perpetuity
Loan Amortization

Module III: Risk, Return and Finance

Risk and Return: Concepts
Relationship Between Risk and Return
Risk Diversification
Systematic and Unsystematic Risk
Measuring the Risk: Variance and Standard Deviation

Module IV: Understanding the Bond Market

Financial Securities- Bonds and Equities: Features, Types
Interest Rates and Yields
Current Yield
Yield to Maturity
Duration

Suggested Readings:

Books:

Drake P.P and Fabozzi, F.J., 2010, The Basics of Finance: An Introduction to Financial Markets, Business Finance, and Portfolio Management (Frank J. Fabozzi Series), John Wiley & Sons.

Pandey, I.M., 2018, Financial Management (11th Edition), Vikas Publishers.

Shim, J.K and Spiegel, J.G., 2009, Financial Management (3rd Edition), Schaum's Outlines Mcgraw-Hill Education.

Course Code: C-04
Course Name: Principles of Economics
Course Outcomes:

a) To teach students to think like an economist (Module I)
b) To introduce to students the concept of trade, and its importance in economics (Module II)
c) To familiarize students with the concept of market failure, and related concepts (Module III)
d) To introduce basic concepts in macroeconomic theory (Module IV)

Module I: The Art and Science of Thinking Like an Economist

Choices
Menu of Choices
Thinking About Choices
Defining a Choice Set
Costs
Opportunity Costs
Sunk Costs
Incentives
Understanding Incentives
Designing Incentives
Limitation Of Incentives
Negative Incentives
Limitations of Negative Incentives
Horizons
Thinking About Long Vs Short Term Horizons
An Introduction to Concepts in Economics: Meaning, Etymology, Definition, Limitations

Module II: Trade and its Importance to Economic Theory

Trade
Games
Zero Sum Games
Non-Zero Sum Games
Economics as a Non-Zero Sum Game
Importance of Markets
Evolution of Markets
Evolution of Trade
Prices, Information and Action
Importance of Property Rights

Module III: Market Failure and Why it Matters

Externalities
Unintended Consequences
Shadow Pricing
The Role of Government
The Theory of Second Best

What are the Alternatives?
Information Asymmetry
Moral Hazard
Adverse Selection
Competition
Monopoly
Network Effects
Technology and Economics

Module IV: The Building Blocks of Macroeconomics
Money
Evolution of Money
Debt, Trade and Money
Inflation: Its Measurement and Problems
Unemployment: Types, Measures and Problems
Measuring Growth: The Difficulty and the Necessity

Suggested Readings:
Books:
Cowen, T., 2008, Discover Your Inner Economist: Use Incentives to Fall in Love, Survive Your Next Meeting, And Motivate Your Dentist, Plume.
Deodhar, S. Y., 2016, Day to Day Economics, Random Business.
Frank, R. H., 2008, The Economic Naturalist: Why Economics Explains Almost Everything, Virgin.
Graeber, D., 2014, Debt: The First 5000 Years, Penguin Books.
Mcmillan, J., 2003, Reinventing the Bazaar: A Natural History of Markets, Norton.

Course Code: M-01

Course Name: Indian Film Music and Indian Drama

Course Outcomes:

a) To provide an introduction to Theatre (Traditional and Contemporary) and to give an overview of the Indian creative industry. (Module I)
b) To introduce the students to the finance, accounting and administrative part of the Indian creative industry. (Module II)
c) To enable students to develop a critical understanding of cultural policies and the cross-sector and interdisciplinary nature of cultural organizations and the infrastructure, both state and commercial that supports them. (Module III)
d) Understand and evaluate contemporary administrative and management practice within arts organizations and their potential professional practice. (Module IV)

Module I: Basics of Theatre and the Indian Creative Industry

What is Theatre?
Understand and analyze different theatre cultures around the globe.
Indian regional theatre.
Type and Form.
Important Elements of Theatre.

Module II: Revenue and Finance in Theatre, Film and Music.

Understanding the Indian Creative economy.
Revenue Generation in Theatre, Film and Music.
Income models and their involvement in the Creative industry.
Types of Incomes.
Running a Theatre organization.

Module III: Economics and Politics in the Indian Theatre Industry)

Economics in Theatre.
SWOT Analysis.
A brief overview of Film and Music Economics.
Field visit and Guest lecture.
Production Budget & Finance.
Politics in Theatre: Introduction to cultural policies in Theatre.

Module IV: Administration & Fundraising for Theatre.

Business planning for a theatre organization.
PESTLE Analysis of the business plan.
Basics of Fundraising.
Types of funding in the creative economy.

Suggested Readings:

1. Resetting the Creative Arts & Education for the Asian Century (Samuel Leong)
2. The Creative Economy, Entertainment and Performance (Greg Richards)
3. Entrepreneurship in the Creative Industries (Edward Elgar, UK)
4. Creative Industries Federation: International

Course Code: M-02
Course Name Yoga & Mental Wellness
Course Outcomes:
Paper I – theory
Paper II – Practical
Topics for Paper I
Human biology
Schools of Indian Philosophy and Different tradition in Yoga
Science of Yoga
Introduction to Yoga sutra of Patanjali
Applications of Yoga and its relevance in the modern world (Yoga for individual growth, self-development, health, wellness)

Topics for Paper II
Asana
Utthita Sthiti (Standing asanas)
Upavishta Sthiti (Sitting asanas)
Paschima pratana (Forward bending asanas)
Purva pratana (Backward bending)
Parivritta Sthiti (Lateeral extension)
Viparit Sthiti (Interventions)
Udara akunchanasan (Abdominal asana)
Introduction to Pranayama

References
Light on Yoga (1963) : Yogacharya B.K.S. Iyengar – Harper Collins, India
Yoga shastra (2012) Tome 4 & Tome 5 – RIMYI, Pune & YOG, Mumbai
Yoga – Path to Holistic Health – D.K Publications
Preliminary Course book (2000) by Geeta S. Iyengar – Yog, Mumbai

Course Code: C-05

Course Name: Principles of Microeconomics

Course Outcomes:

a) To introduce to the students the basic economic principles (Module I)
b) To acquaint students with concepts of market demand and supply (Module II)
c) To introduce to the students the concepts of consumer theory (Module III)
d) To familiarise the students with the concepts of producer theory (Module IV)
e) To train the students to apply the concepts in real life scenarios (Module III and Module IV)

Module I: Basic Economic Principles

Scope and Method of Economics
Production and Distribution
Scarcity and Incentives
Reading and Understanding Graph

Module II: Demand and Supply

Individual Demand and Supply
Market Demand and Market Supply
The Concept of Equilibrium
Elasticity of Demand/Supply
Studying Demand Curve and Supply Curve

Module III: Consumer Theory

Budget Constraint
Demand for Goods and Price
Indifference Curve
Income Effect and Substitution Effect
Hicksian and Slutsky method of Decomposition

Module IV: Producer Theory

Behaviour of Profit Maximizing Firms
Concept of Iso-quant
Firm's Equilibrium
Concept of Costs
Fixed Cost, Variable Cost and Average Cost

Suggested Readings:

Books:

1. Cohen, K.J. and Cyert, R.M., 1964, Theory of the Firms: Resource Allocation in a Market Economy, Prentice Hall.
2. Ferguson, C. E. and Gould, J.P., 1980, Microeconomic Theory, Aitbs Publishers and Distributors.
3. Hal R. Varian, 2010, Intermediate Microeconomics, a Modern Approach, W.W. Norton and Company/Affiliated East-West Press (India).
4. Karl E. Case and Ray C. Fair, 1993, Principles of Economics, Pearson Education Inc.

5. N. Gregory Mankiw, 2008, Economics: Principles and Applications (India Edition), South Western, a part of Cengage Learning, Cengage Learning India.

Course Code: C-06
Course Name: Intermediate Statistics (With STATA/SPSS)
Course outcomes:

a) To introduce the applications of moments (Module I)
b) To familiarise students with the basics of hypothesis testing (Module II) (Module III)
c) To introduce the concepts and applications of time series analysis and index numbers (Module IV)

Module I: Applications of Moments

Moments in terms of Expectation
Random Variables and its Expectations
Probability Generating Function
Convergence in Probability and its Distribution

Module II: Hypothesis building

Estimator and Estimate
Null and Alternative Hypothesis
Type I & Type II Error
Level of Significance

Module III: Test of significance

Normal Distribution
Z-test, F-test & t-test
P-value Approach

Module IV: Index numbers and Time series analysis

Time Series and its Components
Methods of Trend Estimation and Smoothing
Measurement of Seasonal Variations
Index Numbers - Laspeyere's, Paarsche, Splicing and Linking

Suggested Readings:
Books:

Anderson, Sweeney and Williams, 2014, Statistics for Business and Economics, (12th Edition), Cengage India.
A. Aczel and J. Sounderpandian, 2017, Complete Business Statistics (7th Edition), McGraw Hill Education.
Andy Field, 2019, Discovering Statistics using IBM SPSS Statistics (4th edition), Sage Publication.
Wayne Winston, 2016, Microsoft Excel 2016 - Data Analysis and Business Modeling, Prentice Hall India.

Course Code: C-07
Course Name: Intermediate Calculus for Economics
Course outcomes:

a) To introduce to the students the fundamentals of matrix and vector algebra (Module I) (Module II)
b) To familiarise the concepts of differential equations along with its applications (Module III)
c) To introduce the students to the concepts of difference equations. (Module IV)

Module 1: Matrix and Vector Algebra

Introduction to matrices and vectors
Matrix Operations
Types of Matrices
Basic principles of matrix multiplication
Matrix multiplication – the general case
The matrix inverse and the solution of simultaneous equations
Determinants and Non singularity
Minors, cofactors and the Laplace expansion
The transpose matrix, the adjoint and the matrix inverse formula
Solving system of linear equations using inverse of the matrix.
Cramer's rule
Application to Market and National -Income Models
The Leontief Input-Output Models

Module II: Matrix and Vector Algebra continued

Dot product, cross product of vectors.
Norm of a vector, Vector triple product
Linear combinations, Linear dependence and linear independence of vectors
Row operations
Augmented Matrix
Gauss Elimination method
Rank of a matrix
Eigen roots and eigenvalues and their interpretations from the point of view of economic theory
Special Determinants and matrices and their application in Economics- The Jacobian
Second-order conditions and the Hessian matrix
Constrained optimization and the bordered Hessian

Module III: Differential Equations

Introduction, Solutions of Differential Equations
Non-linear differential equations of the first order and first degree
Case I- Variable separable case,
Case II- Differential equation with homogeneous coefficients,
Case III- Exact differential equations;
Linear differential equation of first order
Linear differential equation of second order with constant coefficient
Characteristic Roots,

General Solution of Differential Equations Complementary function and particular integral.
Domar Growth model

Module IV: Difference Equations

Introduction of Difference Equations
Solutions Homogeneous linear difference equation with constant coefficients,
Geometric interpretation of solutions,
Particular solutions of nonhomogeneous linear equations,
Solving a First order difference equation
Lagged Income determination model
The Cobweb Model
The Harrod Model
Second order linear difference equations with constant coefficients
Samuelson Multiplier-Accelerator Model

Books:

Alpha C. Chiang and Kevin Wainwright, Fundamental Methods of Mathematical Economics, McGraw-Hill Education, 2005
Alpha C. Chiang and Kevin Wainwright, Fundamental Methods of Mathematical Economics, 4th Edition, McGraw-Hill, INC.
An Introduction to Mathematical Economics Part 1: Michael Sampson
Bittinger, Ellenbogen, Surgent, Calculus and its Applications, Tenth Edition, Pearson Publication.
Dowling T Edward (1992), Introduction to Mathematical Economics, 2nd edition, McGraw-Hill, INC.
Edward T. Dowling, Introduction to Mathematical Economics, Schaum's Easy Outline, McGraw-Hill Education, 2020
G.F. Simmons , Differential Equations with Applications
Mike Rosser, Piotr Lis, Basic Mathematics for Economists, 2016, Routledge
Peter Hammond, Knut Sydsaeter, Arne Storm, Andrés Carvajal, Essential Mathematics for Economic Analysis. Fifth Edition, Pearson.
Taro Yamane (1975), Mathematics for Economists: An Elementary Survey, 2nd edition, PHI, Tokyo

Course Code: C-08
Course Name: Principles of Macroeconomics
Course outcomes:

a) To familiarize the students with the basic concepts in macroeconomics (Module I)
b) To introduce students to the basics of Keynesian economics (Module II)
c) To introduce to students the building blocks of monetary economics (Module III)
d) To acquaint students with the aggregate demand-aggregate supply framework (Module IV)

Module I: An Introduction to Macroeconomic Theory

The Data of Macroeconomics- Measurement of National Income
Measuring the Cost of Living
The Real Economy in the Long Run- Production and Growth
Saving, Investment, and the Financial System
The Basic Tools of Finance
Unemployment

Module II: The Basics of Keynesian Economics

Keynesian Cross
Basic Keynesian Concepts
An introduction to the General Theory of Interest
Unemployment and Money

Module III: The Building Blocks of Monetary Theory

Money and Prices
The Monetary System
quantity theory of money
Measures of money supply
credit creation
Introduction to transmission mechanism for money

Module IV: The AD-AS Framework

Aggregate Demand and Aggregate Supply
The Influence of Monetary and Fiscal Policy on Aggregate Demand
The Short-Run Trade-off between Inflation and Unemployment Economic Fluctuations

Suggested Readings:
Books:

Case, K. E. Fair, R. C. & Oster, S.E., 2014, Principles of Macroeconomics (10th Edition), Pearson Education.
Gupta, S. B., 2012, Monetary economics: institutions, theory and policy, S. Chand & Company.
Mankiw, N. Gregory 2008, Principles of Macroeconomics (5th Edition), Cengage Learning.
Nellis, G. Joseph and Parker, D 2004, Principles of Macroeconomics, Financial Times Prentice Hall, Pearson Education.
R. Dornbusch, S. Fischer, R. Startz., 2012, Macroeconomics (11th edition)., Tata McGraw Hill.

Course Code: S-01
Course Name: Introduction to Cost and Management Accounting
Module -1
Management Accounting and Cost Accounting – Meaning and relevance in Economics
Financial Accounting – Introduction and basics
Direct and Indirect Costs, Fixed, Variable Costs and Semi Variable Costs
Total Costs and Unit Costs, Prime Cost and Conversion Cost, Overtime Premium and Idle Time

Module -2
Overhead Costs and their allocation
Cost Sheet
Job Costing and Process Costing – Introduction
Economic Order Quantity

Module – 3
Contribution Margin and Gross Margin Method
Break Even Point

Module – 4
Cost Plus pricing, Target Rate of Return pricing
Pricing Strategies: Penetration Pricing, Skimming Pricing, Entry Preventing Price and Charm Pricing

Suggested Reading
1.Charles T. Horngren, Shrikant Datar, George Foster, Madhav Rajan, Christopher Ittner., 2008, Cost Accounting: A Managerial Emphasis, Pearson.
2. Joel Dean, 1951, Managerial Economics, Prentice Hall.
3. M. Y. Khan & P. K. Jain, 2006, Management Accounting, Tata McGraw Hill.

Course Code: In-01
Course Name: Economic Geography
Course outcomes:

a) To acquaint the students with the basic concepts of economic geography
b) To introduce the students to the role of various resources in global economic development.
c) To familiarise the students with concepts in international trade.
d) To sensitise students to regional disparities and the impact of location on development.

Module I: An Introduction to Economic Geography

Introduction to Economic Geography
Introduction to globalisation
Feudalism to capitalism

Module II: Population

Distribution of population, density, demographic transition and development.
Migration and its impact

Module III: Resources and their limitations

Resources and population, resources and reserves, food resources. Renewable and non-renewable sources, The geography of energy.
Theoretical considerations: Factors of Location, Weberian Model, Evaluation of Industrial location theory

Module IV: International Trade and Investment:

Introduction to trade pattern, composition and economic geography, Evolution of trade and economic geography: 1600 to 1817, 1817 to 1945, 1945 to 1991 and 1991 onwards
International Investments and geography, economics of agglomeration and location, core and periphery arguments, Trends from 1991 onwards

Module V: Underdevelopment

Location and Problems: major perspectives on development.
Regional disparities.

Suggested Readings:
Books:

1. The World Economy: Geography, Business, Development. (Sixth Edition) . Frederick Stutz, Barney Warf
2. Prisoners of geography: Tim Marshall

Course Code: C-09

Course Name: Intermediate Microeconomics

Course outcomes:

a) To provide students an introduction to market structures in microeconomic theory (Module I)
b) To familiarize students with the microeconomic aspects of land and labor markets (Module II)
c) To give students an introduction to general equilibrium (Module III)
d) To introduce to students the microeconomic theories of risk and uncertainty (Module IV)

Module I: Market Structures in Microeconomic Theory

Perfect Competition
Imperfect Competition
Monopoly and Barriers to Entry- Output Determination and Price Rule
Measure and Sources of Monopoly Power
Social Costs of Monopoly Power-Deadweight Loss
Pricing with Market Power- First-, Second- and Third-Degree Price Discrimination
Monopolistic Competition- Short Run and Long Run Equilibrium
Excess Capacity
Oligopoly Equilibrium as Nash Equilibrium
Cournot, Bertrand and Stackelberg Model - Competition versus Collusion- the Prisoners' Dilemma
Collusive Oligopoly - Cartels and Price Leadership

Module II: The Microeconomics of Factor Markets

Labour and Land Markets - Basic Concepts (Derived Demand, Productivity of an Input, Marginal Productivity of Labour, Marginal Revenue Product)
Demand for Input
Input Demand Curves
Shifts in Input Demand Curves
Competitive Input Markets
Non-Competitive Input Market
Bilateral Monopoly
Monopsony

Module III: General Equilibrium, an Introduction

General Equilibrium and Economic Efficiency- Exchange, Production and Welfare
Pareto Optimality
Edgeworth box and Contract Curve
Pareto Efficiency and Perfect Competition
Reasons for Market Failure
Pareto Efficiency and Market Failure (Externalities and Public Goods)
Property Right
Coase Theorem

Module IV: Risk and Uncertainty in Microeconomics

Concepts of Expected Value and Uncertainty
Markets with Asymmetric Information-Adverse Selection, Moral Hazards, Agency Problems

Suggested Readings & Books:

Ferguson, C. E., & Gould, J. P., 1989, Microeconomic Theory, Aitbs Publishers and Distributors
Lipsey, R. & Chrystal, A., 2007, Economics, OUP
Maddala, G.S., & Miller, E., 1989, Microeconomics, Prentice Hall, McGraw Hill.
Pindyck, R. S., Rubinfeld, D. L., & Mehta, P. L., 2017, Microeconomics (8th Edition), Pearson.
Varian, H. R., 2010, Intermediate Microeconomics (8th Ed.), WW Norton and Company.

Course Code: C-10

Course Name: Introduction to Theory of Econometrics

Course outcomes:

a) To acquaint students with the building blocks of regression analysis
b) To have students work with simple regression models
c) To introduce to students the problems one encounters in regression analysis in practice
d) To introduce to students intermediate problems in regression analysis, and potential treatments of said problems

Module I: The Building Blocks of Regression Analysis

Review of Probability and Statistics
Univariate Case & Bivariate Case
Random Variables and Probability Distributions
Expectation and Moments
Review of Statistical Inference
Sampling Distributions and Inference
The Central Limit Theorem (Asymptotic Distribution of the Sample Mean)
Confidence Intervals
Testing of Hypotheses

Module II: Running a Regression, and Understanding the Diagnostics

Conditional Expectation Functions
Bivariate Regression
Sampling Distribution of Regression Estimates
Gauss-Markov Theorem
Asymptotic Distribution of the Sample Slope
Residuals
Fitted Values
Goodness of Fit

Module III: Potential Issues with Regression Analysis

Multivariate Regression: Anatomy of Multivariate Regression Coefficients
Specification Analysis Omission of a Relevant Variable
Inclusion of Irrelevant Variable
Tests of Specification Errors
Dummy Variables and Interactions
Testing Linear Restrictions Using F-Tests

Module IV: Intermediate Problems in Regression Analysis

Inference Problems - Heteroscedasticity and Autocorrelation
Consequences of - Heteroscedasticity, Weighted Least Squares, The Linear Probability Model
Serial Correlation in Time Series
Consequences of - Quasi-Differencing, Common-Factor Restriction
Durbin-Watson Test for Serial Correlation

Suggested Readings:

Books:

C Dougherty, 2011, Introduction to Econometrics, (4th edition), Oxford University Press.
Gujarati, D. N., & Porter, D. C., 2010, Essentials of econometrics, McGraw-Hill/Irwin.
Stock, J. H., & Watson, M. W., 2018, Introduction to econometrics, Pearson.

Course Code: C-11

Course Name: Operations Research

Course outcomes:

a) An introduction to the framing of an OR problem, and its solution by the graphical method, and by the simplex method (Module I)
b) To introduce the concept of duality, and its applications (Module II)
c) To introduce to students the idea behind nonlinear programming (Module III)
d) To familiarize students with the concepts behind Markov Chain Analysis (Module IV)

Module I: The Framing of, and Solutions for, an OR Problem

Operations Research Models
Solving the OR Model, Queuing and Simulation Models
Art of Modeling
More than Just Mathematics
Phases of an OR Study
Modeling with Linear Programming- Introduction
Two-Variable LP Model, Graphical LP Solution
Computer Solution with Solver and AMPL
Linear Programming Applications
The Simplex Method and Sensitivity Analysis - LP model in Equation Form
Transition from Graphical to Algebraic Solution
The Simplex Method, Artificial Starting Solution
Special Cases in the Simplex Method
Sensitivity Analysis

Module II: Duality and Related Concepts in Operations Research

Duality and Post-Optimal Analysis - Definition of the Dual Problem
Primal–Dual Relationships
Economic Interpretation of Duality
Additional Simplex Algorithms
Dual Simplex Algorithm
Post-Optimal Analysis
Bounded-Variables Algorithm
Duality
Unboundedness and Infeasibility
Parametric Linear Programming Transportation Model and Its Variants
Definition of the Transportation Model
Non-traditional Transportation Models
The Transportation Algorithm - Determination of the Starting Solution
Northwest-corner method
Least-Cost Method
Vogel Approximation Method (VAM)
Iterative Computations of the Transportation Algorithm
Transhipments model- Simplex Method Explanation of the Method of Multipliers
The Assignment Model

The Hungarian Method
Simplex Explanation of the Hungarian Method

Module III: Nonlinear Programming in Operations Research
Classical Optimization Theory Unconstrained Problems
Constrained Problems - Constrained derivatives (Jacobian) Method
Sensitivity Analysis in the Jacobian Method
Lagrangean method - Inequality Constraints—Karush–Kuhn–Tucker (KKT) Conditions
Sufficiency of the KKT Conditions
Nonlinear Programming Algorithms Unconstrained Algorithms
Constrained Algorithms- Separable Programming and Separable Convex Programming
Quadratic Programming
Chance-Constrained Programming
Linear Combinations Method and SUMT Algorithm

Module IV: Markov Chains and Related Concepts
Markov Chains: Definition of a Markov Chain
Absolute and n-Step Transition Probabilities
Classification of the States in a Markov Chain
Steady-State Probabilities and Mean Return Times of Ergodic Chains
First Passage Time
Analysis of Absorbing States
Simulation Modeling Monte Carlo Simulation
Types of Simulation - Elements of Discrete Event Simulation
Generic Definition of Events
Sampling from Probability Distributions -Inverse method
Convolution method
Box-Muller Normal Sampling Formula
Generation of Random Numbers
Mechanics of Discrete Simulation - Manual Simulation of a Single-Server Model and Spreadsheet-Based Simulation of the Single-Server Model
Methods for Gathering Statistical Observations - Subinterval Method and Replication Method
Simulation Languages

Suggested Readings:
Books:
Taha, H., 2011, Operations Research: An Introduction (9th Ed.), Pearson.

Course Code: C-12

Course Name: Intermediate Macroeconomics

Course outcomes:

a) To introduce the students to the basics of aggregate demand theory (Module I)
b) To introduce the interactions between aggregate demand and supply (Module II)
c) To acquaint the students with open economy models (Module III)
d) To introduce to the students the applications of intermediate macroeconomics (Module IV)

Module I: Aggregate Demand

Aggregate Demand: Components of Aggregate Demand.
Aggregate Demand Curve and Its Determinants.
The Policy of Aggregate Demand Management.
Consumption Function Investment Function, The Government and External Sector Role in Determination of Aggregate Demand.
Aggregate Supply Meaning and Derivation of Aggregate Supply Curve. Its Determinants and Policy Implications

Module II: Interaction between Aggregate demand and Aggregate Supply

Macroeconomic Issues and Interaction of Aggregate Demand and Supply, Including The Is-lm Approach The Macroeconomic Equilibrium - Inflation, Unemployment and Expectations Phillips Curve; Adaptive and Rational Expectations; Policy Ineffectiveness Debate.

Module III: Open Economy Models

Open Economy Models: Mundell-Fleming Model; Exchange Rate Determination; Purchasing Power Parity; Asset Market Approach; Dornbusch's Overshooting Model; Monetary Approach to Balance of Payments; International Financial Markets.

Module IV: Application of Intermediate Macroeconomics

Micro Foundations of Macroeconomics
Micro Foundations Of Consumption: Fisher‘s Theory Of Optimal Intertemporal Choice; Life-cycle and Permanent Income Hypothesis; Rational Expectations and Random-walk Of Consumption Expenditure.
Post Keynesianism Micro Foundations of Investment: Determinants of Business Fixed Investment; Residential Investment and Inventory Investment.

Suggested Readings:

Books:

Dornbusch, Fischer and Startz, 2010, Macroeconomics (11th Edition), Mcgraw Hill.
N. Gregory Mankiw., 2010, Macroeconomics (7th Edition), Worth Publishers.
Errol D‘souza, 2009, Macroeconomics, Pearson Education.
Paul R. Krugman, Maurice Obstfeld and Marc Melitz, 2012, International Economics (9th Edition), Pearson Education Asia.

Course Code: PS-01

Course Name: Communication Skills and Public Speaking

Course outcomes:

a) To introduce to students the importance of clear communication (Module I)
b) To familiarize students with the barriers to effective communication (Module II)
c) To help students learn how to design and deliver presentations (Module III)
d) To have students deliver effective presentations through practice (Module IV)

Module I: Communicating Clearly

The Building Blocks of Communication
The Process of communication
The Functions, Characteristics and Types of Communication
The Responsibilities of Sender and Receiver for effective communication
Modes for different types of Communication agenda Listening Skills

Module II: The Barriers to Effective Communication

Barriers to Effective Communication
Individual Barriers to Communication
Process Barriers to Communication
How to Overcome Barriers?
Concept of Grapevine and How to Avoid It: Strategic Communication
Communicating with Different Demographics
Communicating in Cross-Cultural Setting
Communicating in Difficult Situations and Conflicts Polishing the Communication Skills in Knowledge Economy
Technology in Communication
Symbolisms in Communication - Pitch, Tone and Modulation

Module III: Designing an Effective Presentation

Anatomy of a Successful Presentation
Fundamental Principles of Presentation
Expressions, Self-Awareness and Structure of the Presentation
Understanding Your Speech Strength as a Presenter
Psychologically Preparing Your Presentation
Confidence Building and Positive Self Talk
Toning the Central Message
Introduction and Conclusion Effectively for Strong Start and End
Effective Stage Presence and Pretext Setting
Understanding Your Audience, Their Needs and Characteristics

Module IV: Delivering an Effective Presentation

Presenting: Effective Visual Aids- ppts, Videos and Other Tools
Avoiding Too Much, Too Less, Too Soon and Too Late Part of Message
Body Language and Voice Command
Controlling Buffer Words

Improving Your Presentation: Strengthening Content Through Emotions, Actions, Analogies Word play and Involvement
Managing Audience Interactions
How and When to Use Humour in Presentation

Suggested Readings:

Books:

Berkun, S., 2010, Confessions of a Public Speaker, O'Reilly.
C.B. Mamoria, S. V.Gankar, 2011, Personnel Management, Himalaya Publishing House.
Robbins, S. P., Judge, T. A., & Campbell, T. T., 2017, Organizational Behaviour, Pearson Education Ltd.
Tracy, B., 2008, Speak to Win. How To Present with Power in Any Situation, Amacom.

Additional References:

Case Studies, Articles, Exercises and Live Projects (Activities)
Practical Through Newspaper Readings, Articles, Blogs, Books and Other Reading Materials
Practical Through Newspaper Readings, Articles, Blogs, Books and Other Reading Materials
Videos, Audios, Speeches, Writings and Other Material for Exercises

Course Code: ICT-01
Course Name: Introduction to R Language
Objectives:
1.To develop proficiency in computational thinking and problem-solving strategies using language-agnostic approaches and algorithmic thinking.
2.To gain practical knowledge of R programming, including installation, basic syntax, data structures, and functions.
3.To enhance skills in data manipulation and visualization, including using R packages, handling data frames, and creating basic graphs and charts.

Module 1: Computational Thinking Approach (4 Hours)
Computational Thinking and Problem solving
Language agnostics approaches
Problem-solving strategies
Algorithmic thinking
Iterative approaches
Visualizing through flow-charts
Abstracting Commonly used Patterns – Iterators, Conditionals, Functions.

Module 2: Introduction to R (8 Hours)
Installation of R and RStudio
Basics of R – Objects, Variables, Datatypes
Major R data structures: vectors, matrices, arrays, lists, and data frames
Control structures (loops and conditionals)
Functions: Understanding and writing Functions, Return Value, Environment & Scope.

Module 3: Effectively Using R Data Structures (8 Hours)
R Packages and Installation.
Slicing, Selection and Filtering.
Vectors, Matrices and Lists.
Data Frames and Factors.
Good Programming Practices

Module 4: Data Manipulation and Visualization (10 Hours)
File Reading and Writing: Text files, CSV files and Excel sheets.
Data Manipulation : Sorting and Data Type Conversion, Aggregation (GroupBy), Missing and Duplicate Values, Merging and Joining Data Frames
Plotting Basic Graphs & Charts: Line Plot, Bar Plot, Histogram, Scatterplot

References: Various Online Resources
https://www.javatpoint.com/r-tutorial
https://rstudio-education.github.io/hopr/
https://rbasics.netlify.app/index.html
http://home.iitk.ac.in/~shalab/sprs.htm
https://r4ds.hadley.nz/intro

https://cran.r-project.org/doc/manuals/

Course Code: C-13

Course Name: Intermediate Econometrics (with R)

To acquaint the students with basic tools and techniques to do econometrics using R and Python - to familiarize students with coding and syntax requirements in R and Python - to equip students with a working knowledge of statistical theory and their application to datasets in R and Python

Course outcomes:

a) To introduce to the students the basics of data structures and data visualization (Module I)
b) To introduce students to data handling in Python (Module II)
c) To acquaint student with linear and logistic regression in Python and R. (Module III)
d) To expose students to the application of R and Python using appropriate case studies (Module IV)

Module I: Introduction to basic data structures and data visualization

Basic Data Structures In R: Vectors, Dataframes, Lists, Matrix.
Importing Data From Flat Files, SQL Servers and Web
Data Manipulation Using DPLYR: Filtering, Sorting, Selecting, Group By Operations,
Working With Dates, Joining Dataframes, Handling Missing Values
Data Visualization: Ggplot2, Grammar of Graphics, Building Custom Plots Using Ggplot 2

Module II: Introduction to data in Python

Basic Python Data Structures: Numbers, Strings, Lists, Dictionary, Tuples, Files.
Importing Data From Flat Files, Sql Servers and Web Intro To Pandas
Data Manipulation: Filtering, Sorting, Selecting, Group by Operations, Working with Dates, Joining Data Frames, Handling Missing Values
Data Visualization: Using Inbuilt Pandas Plotting Functions.
Using Seaborn and Plotly.

Module III: Linear and Logistic Regression in Python and R

Feature Engineering - Doing Sanity Checks, Imputing Missing Values, Dealing with Outliers, Binning Continuous Variables.
Linear Regression in Python and R.
Linear Regression: Predicting Continuous Variable Using OLS, WLS, Assumptions of
Linear Model, constructing a Regression Model in Python, Checking Model Assumptions,
Doing K-Fold Cross Validation
Logistic Regression in Python and R.
Logistic Regression: Predicting a Binary Variable, Interpreting Model Output, Using Python to Create a Logistic Model, Checking Model Diagnostics, Computing Accuracy Metrics, ROC, AUC, Kappa, Doing K-Fold Cross Validation

Module IV: Case Studies

Case Studies: Predicting Customers Who are Likely to Default on a Loan Payment Based on Historical Data Such as NPA Status, Debt Ratio and More.
Case Studies: Predicting the Presence of a Heart Disease in an Individual Based on Various Attributes Such as Cholesterol Levels, Heart Rate, Blood Pressure, Chest Pain Type, Blood Sugar and More.

Suggested Readings:

Books:

1. Hatekar, N., 2010, Principles Of Econometrics, Sage Publications.

Course Code: C-14

Course Name: International Trade: Pure Theory

Course outcomes:

a) To provide a fundamental understanding about the major principles and theories of international trade (ModuleI)
b) To introduce to students the basic theories that govern modern international trade theory (Module II)
c) To introduce to students some intermediate problems in international trade theory (Module III)
d) To familiarize students with the barriers to international trade (Module IV)

Module I: The Building Blocks of International Trade Theory

Mercantilist Doctrine of Balance Trade
Adam Smith and Absolute Advantage Theory of Trade
Ricardo and Comparative Advantage, Its Limitations
Production Possibility Curve
Community Indifference Curve
Gain from Trade
Offer Curve
Determination of International Equilibrium Price

Module II: The Basic Theorems of International Trade

Different Concepts of Terms of Trade
Factors Affecting Terms of Trade.
Heckscher Ohlin Model
Stolper-Samuelson Theorem
Rybczynski Theorem
Definitions of Factor Abundance
Relationship Between Factor Prices and Commodity Prices
Factor Price Equalisation Theorem
Factor Intensity Reversal
The Leontief Paradox.

Module III: Nuances in International Trade Theory

Other Alternative Explanations of The Basis of Trade in Terms of Technological Lead, Domestic Market Size and Product Cycle Approach
Linder's Hypothesis
Intra-industry Trade

Module IV: Barriers to International Trade Today

The Rationale of Tariffs, Quotas and Subsidies
Infant Industry Argument
Tariffs and Factor Income Distribution
Tariffs, Terms of Trade and Domestic Prices
The Optimum Tariff Rate
Tariffs, Subsidies and Distortions in Commodity and Factor Markets
Effective Rate of Protection

Welfare Implications of Tariffs
Non-tariff Barriers
Effects of Quotas and Other Quantitative Restrictions
Tariffs Versus Quotas

Suggested Readings & Books:

Chacholiades, M., 1973, The Pure Theory of International Trade, Routledge
Salvatore, D., 1983, International Economics, John Wiley & Sons Inc.
Södersten, B. and Reed, G., 1994, International Economics, Palgrave Macmillan

Course Code: C-15

Course Name: Accounting and Financial Statement Analysis

Course Objective-

To provide students with hands-on experience analyzing financial statements. This subject will help students in learning the general concepts of accountancy, and analysis of financial statements in different ways. By the end of the course, students should be comfortable analysing and comparing the financial statements to assess company performance.

Course Outcomes:

CO1- Detailed understanding of accounting concepts and principles

CO2- Preparation of Financial Statements according to Companies Act, 2013

CO3- Analysis of Income and Expenditure and Cash Flow Statements in detail.

CO4- Analysis of the balance sheet along with annual reports of various companies.

Module 1- Introduction to Accounting (10 hours)

Definition-Accounting, Business Accounting, Cost Accounting, Need for accounting, Branches of accounting, Basic terms of accounting, Difference between book keeping and accounting, accounting concepts and conventions, Rules of Accounting and its application, Accounting Principles and Accounting Standards, GAAP, Accounting Standards by ICMA, Concept of IFRS, Difference between GAAP and IFRS.

Model 2- Preparation of financial statements (10 Hours)

Journal Transactions, Ledger Transactions, Trail Balance, Income and expenditure statements, Cash Flow Statements.

Balance Sheet, Double entry accounting system, Common form of balance sheet, Presentation of the Balance sheet according to IFRS, Preparation of Balance sheet according to Companies Act 2013, Off balance sheet items.

Module 3- Analysis of Financial Statements- I (10 Hours)

Objective of Financial Statement Analysis, Techniques to analysis- Horizontal analysis and vertical analysis.

Income and Expenditure Statement-Revenue recognition, Income recognition, COGS, Gross Profit, Depreciation, Amortization, Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA), EBIT, Link between income and expenditure statement and Balance sheet.

Cash Flow statements- Cash Flow from Operations, Cash flow from financing and investing activities, Link between Cash Flow statement and Balance sheet.

Funds flow statements

Equity statements

Module 4- Analysis of Financial Statements- II (10 Hours)

Ratio analysis- Liquidity ratios, Working capital efficiency ratios, Profitability ratios, Solvency ratios, Activity Turnover ratios,

Equity Analysis- The dividend discount model, The price to earnings ratio, du point analysis.

Trend analysis

Studying the annual reports of companies in different sectors in detail along with notes to consolidated statements.

Analysing and comparing the Financial Statements in detail of various companies.

Reference Material-

1. Introduction to Financial Accounting- David Annand and Henry Dauderis, Publisher-Lyryx, 2021.
2. A Manager's Guide to Finance & Accounting, Harvard Business School, E book.
https://info.email.online.hbs.edu/finance-accounting-ebook?_gl=1*kaytrl*_gcl_au*OTMwNTg5OTI0LjE3MDgyNDA2Nzc.&_ga=2.203373847.745245912.1708240677-662343345.1708240677
3. Financial Accounting- Dr. S. N Maheshwari, Sixth revised edition, Vikas Publication House.
4. Introduction to Accounting-An Integrated Approach by Penne Ainsworth and Dan Deines, 2019, Wiley Publications.
5. Financial Reporting &Analysis Using Financial Accounting Information, Charles H. Gibson, 11th Edition, South-Western Cengage Learning.
6. Financial Statement Analysis- A practitioner's guide, Martin S. Fridson and Fernando Alvarez, Fifth Edition, Wiley Finance Series, Wiley Publication.
7. Financial Statement Analysis, Charles J Woelfel, 1988, Probus Publications
8. Financial Statement Analysis- K.R Subramanyam- Mc Graw Hill Publications
9. Financial Accounting- Dr. S. N Maheshwari, Sixth revised edition, Vikas Publication House.

Course Code: C-16

Course Name: Money Banking & Financial Markets

Course outcomes:

a) To introduce the students to the basic concepts of monetary economics and finance. (Module I)
b) To acquaint students with the structure and functioning of the banking and financial institutions and markets (Module II)
c) To familiarize students with the functions of, and the working of, the central bank (Module III)
d) To familiarize students with the functioning of India's money and financial markets (Module IV)

Module I: The definition, functions and measurement of money

Money as a concept,
Functions of Money
Measurement of Money Supply
Introduction to Modern Currency Systems

Module II: An Introduction to Banking in India

Banking System
Bank Balance Sheets
Banks as Depository Institutions and Their Role in The Money and Credit Supply
Indian Banking Sector Composition, Types of Banks and Contemporary Issues of Profitability and Non- Performing Assets

Module III: The role of the Central Bank

Role of Central Banking and Monetary Policy Functions
Goals, Targets, Indicators and Instruments of Monetary Control
Monetary Management in An Open Economy
Current Monetary Policy of India

Module IV: Money and Financial Markets in India

Financial Institutions, Markets, Instruments
Structure and Functioning of Money and Financial Markets
Role of Financial Markets and Institutions in The Economic Growth
Money and Capital - Instruments

Suggested Readings:

Books:

Bhole, L.M. and Mahukud, J., 2009, Financial Institutions and Markets, 5th Edition, Tata McGraw Hill,
Fabozzi, F.J, Modigliani, F, Jones, F.J and Ferri, M.G, 2009, Foundations of Financial Markets and Institutions (3rd edition), Pearson Education.
Mishkin, F.S., 2009, Economics of Money, Banking and Financial Markets (11th Edition), Pearson Education
Mishkin, F.S and Eakins, S.G., 2009, Financial Markets and Institutions (6th Edition), Pearson Education,

Additional References:

R.B.I. Bulletins, Annual Reports, Reports on Currency and Finance.

Course Code: In-02
Course Name: Demography
Course outcomes:
To understand the fundamentals of population studies and how it is related to other sciences and social sciences. To understand the world population scenario and sources of demographic data. To understand the important concepts of size, growth, distribution and characteristics of Indian population. To familiarize the students with the components of population change and its contribution in change over the time. It also includes understanding the thinking and planning about the future population by setting some short term and long term goals.

Module 1
Introduction to Demography and Population Studies, Interdisciplinary nature of Population studies, Sources of Data (Census & Sample Registration System)

Module 2
World Population Growth, India's Population Size and Growth, Sex-ratio
Age- Sex Structure, Age Pyramids, Literacy, Workforce
Household Amenities, Demographic Dividend

Module 3
Dynamics of Population Change, Fertility, Mortality, Migration and Urbanization

Module 4
Population Projections, Population Policy and Programmes

Recommended Reading:
Bende, A.A. and T. Kanitkar (2014), Principles of Population Studies, Mumbai: Himalayan Publishing House.
F. Ram and K.B. Pathak (1998): Techniques of Demographic Analysis, Himalaya Publishing house, Bombay(Chapters 2 & 3).
Newell, C. (1988), Methods and Models in Demography, New York: John Wiley and Sons.
Srinivasan, K. (1999), Basic Demographic Techniques and Applications, New Delhi: Sage Publications
Spiegelman, N. (1968), Introduction to Demography, Harvard University Press.

Course Code: S-02
Course Name: Database Management System
Objective

a) To equip students with cutting-edge knowledge about processes to capture, store, retain, and extract data in modern corporations
b) To equip students with the basics of SQL and the associated data manipulation.

Module 1

Relational Database concepts. Entity-relationship model with different real-world examples.

Module 2

Installation and using Database software. (SQLite version 3, DB Browser).
RDBMS Concepts-Tables, Rows, Fields, Data Types.
Data Normalization, Database design
Data Description Language (DDL) - Create, Alter, and Drop Database - Create,
Alter, and Drop Table
Need and use of Primary & Foreign Keys

Module 3

Data Manipulation Language (DML) - Data Loading-Inserting Records Update/
Modify Data-Select Queries-Aggregations-Joins- Inner/Outer - Built-In functions
- Create and use Views - Temporary Tables - Unions - Subqueries/Nested queries.
Import and Export of data to/from the database.

Module 4

Transaction processing: Concurrency control, ACID
property, Serializability of scheduling

Module 5

Using R and SQLite for data management

Course Code: E_1/S_1
Course Name: Elective 1/specialization 1

Course Code: E_2/S_2
Course Name: Elective 2/specialization 2

Course Code: C-17

Course Name: Indian Public Finance

Course outcomes:

a) To introduce students to the role of government intervention in economic activities (Module I)
b) To introduce students to Indian and global theories of public expenditure (Module II)
c) To introduce students to theories of taxation (Module III)
d) To familiarize students with the concepts of fiscal federalism (Module IV)

Module 1: Role of government

Role of government in a market economy, social goods and market failure
Provisioning of public goods and merit goods
Free-rider problem
Publicly provided private goods
Allocation vs distribution
Equity in distribution
Externalities
Normative social choice theory
Arrow's theorem
Majority voting
The median voter model
Representative democracy
Voting paradoxes

Module 2: Expenditure (theories and Indian perspective)

The finance bill, how is a budget made?
How to read/analyse the Indian budget
Key differences between Union, State and Local body budgets
The concept of union deficit and its financing
Case studies: welfare schemes, unemployment benefit programs, education expenditure

Module 3: Taxation (theories & Indian perspective)

Categories of revenue
What is a 'good' tax?
Smith's Cannons of taxation
Equity in taxation- Horizontal and vertical
Incidence and impact of taxation
Laffer curve
Introduction to Indian public finance
India's taxation system
The evolution of direct taxes in India
The evolution of indirect taxes in India
Comparison between direct and indirect taxes
Excise, customs, state VAT
The benefits and drawbacks of India's GST.

Module 4: Fiscal Federalism

Need for a federal structure

Centre-state financial relationship in India

Fiscal decentralisation- with respect to 73rd and 74th Constitutional amendments

The Gadgil formula

The need for cesses and their evolution.

Recommended Reading

Bagchi, A. (2005). Readings in public finance. Oxford University Press.

H.L.Bhatia , Public Finance, S. Chand Publications, 30th edition, 2020.

J. E. Stiglitz. Economics of Public Sector,W. W Norton and Company, 3rd Edition, 2000.

J. Hindriks and G. D. Myles. Intermediate Public Economics, The MIT Press; Annotated Edition, 2006

R.A. Musgrave and P.B. Musgrave, Public Finance in Theory & Practice, McGraw Hill Publications, 5th edition, 1989.

Rao, M. (2005). Changing contours of federal fiscal arrangements in India. In A. Bagchi (ed.): Readings in public finance. Oxford University Press.

Reddy, Y. (2015). Fourteenth finance commission: Continuity, change and way forward. Economic and Political Weekly, 50(21), 27-36. 9

Stiglitz, J. (2009). Economics of the public sector, 3rd ed. W. W. Norton.

The Economic Survey, 2020-21

Vithal, B. P. R., & Sastry, M. L. (2001). Fiscal federalism in India. Oxford University Press, USA.

Course Code: C-18

Course Name: Multivariate Analysis

Course outcomes:

Objectives

a) Able to summarize and interpret multivariate data, will understand the link between multivariate techniques and corresponding univariate techniques. (Module I)
b) Carry out a principal component to summarise high-dimensional data. (Module II)
c) Perform clustering analysis to discover and characterize subgroups in the population (Module III)
d) Conduct inference for multivariate means, construct confidence regions, and understand their potential uses, such as for group comparisons. undertake multivariate hypothesis tests, and draw appropriate conclusions. (Module IV)
e) Use classification and discrimination methods to assign individuals into groups. (Module V)

Module I: Descriptive Multivariate Statistics

Exploratory multivariate data analysis,
Sample mean vector and dispersion matrix,
Correlation matrix,
Graphical representation,
Means, variances, covariance, correlations of linear transforms,

Module II: Dimensionality reduction method

Introduction to principal component analysis and
Correspondence analysis,
Factor analysis,
Canonical correlation coefficients and canonical variables.

Module III: Cluster analysis and multidimensional scaling

What Is Cluster Analysis? Requirements for Cluster Analysis, Overview of Basic Clustering Methods.
Partitioning Methods: k-Means: A Centroid-Based Technique
Hierarchical Methods: Agglomerative versus Divisive Hierarchical Clustering, Distance Measures in Algorithmic Methods, Hierarchical Clustering
Evaluation of Clustering

Module IV: Multivariate Statistical Inference

Tests of hypothesis about the mean vector of a multivariate normal distribution,
Hotelling's T2-statistic and its distribution, applications of Hotelling's T2-statistic.
Goodness-of-fit of multivariate normal distribution.
Simultaneous confidence interval for the linear functions of the mean,
Tests of significance for multiple and partial correlation coefficients.

Module V: Classification problem

Discriminant analysis, Mahalanobis D2-statistic
Methods and applications of MANOVA (without derivation of the distribution of Wilks' lambda)

Suggested Readings & Books:

Härdle, W. K. & Simar, L. (2012). Applied Multivariate Statistical Analysis, Springer, New York
Johnson R.A. & Wichern, D.W. (2007). Applied Multivariate Statistical Analysis, 6th Ed., Pearson Education
Manly, B. F. J., (2004), Multivariate Statistical Methods - A primer, Chapman and Hall / CRC Florida

References:

Avril Coghlan, A Little Book of R For Multivariate Analysis, Release 0.1, https://buildmedia.readthedocs.org/media/pdf/little-book-of-r-for-multivariate-analysis/latest/little-book-of-r-for-multivariate-analysis.pdf
Multivariate Statistical Inference, https://uc-r.github.io/multivariate_inference

Course Code: C-19

Course Name: The Interplay of Economic Theory and Data

Course outcomes:

a) To introduce to students the role of data in the formulation of economic theory (Module I)
b) To introduce to students the sources of data in Indian economic research (Module II)
c) To introduce to students the sources of data in global economic research (Module III)
d) To work with case studies and applications of data in a selection of economic projects (Module IV)

Module I: Data and Economic Theory, The Linkages

An Introduction to The Role of Data in Economic History
The Physiocrats Quesnay - Hume - William Petty – Kuznets
Modern Data Sources
The Structure of Data
An Introduction to Cross-Sectional, Longitudinal and Panel Data
Data Storage and Retrieval
Efficient Data Pulls
Basic Data Cleaning Measures in MS Excel
Basic Data Sanitation Checks in Excel
Basic Data-Related Formulas in Excel

Module II: Data and Economic Research in India

India Specific Data Sources -The Role of The National Sample Survey Organization (NSSO), Central Statistical Organization (CSO), Annual Survey of Industries (ASI), Reserve Bank of India (RBI)
Datasets - (Employee Provident Fund Organization [EPFO], Ministry of Corporate Affairs [MCA], Database on Indian Economy, [DBIE], Census Datasets)
Replication Of GIPE Data Pulling Exercises
GIPE Data Cleaning Exercises
GIPE Data Treatment Exercises
Case Study

Module III: Data and Economic Research in an International Context

Global Data Sources - United Nations Conference on Trade and Development (UNCTAD), World Development Indicators (WDI), World Economic Outlook, Federal Reserve Economic Database (FRED) St. Louis, Eurostat.
Limitations Of Publicly Available Data (China Case Study)
Replication Of GIPE Data Pulling Exercises
GIPE Data Cleaning Exercises
GIPE Data Treatment Exercises
Case Study

Module IV: Applications and Case Studies

Case Studies
The Minimum Wage Controversy
The Backward Bending Supply Curve for Labour
GDP Calculations
Inflation Calculations

Purchasing Power Parity Calculations
Reinhart/Rogoff Controversy

Suggested Readings:
Books:
GIPE Publications [With the Aid of Relevant Faculty/RA's]
Winston, W. L., 2016, Microsoft Excel 2016: Data Analysis and Business Modelling, Microsoft Press.

Course Code: O-01
Course Name: Socio Economic Supervised Learning

Course Code: E_3/S_3
Course Name: Elective 3/specialization 3

Course Code: E_4/S_4
Course Name: Elective 4/specialization 4

Course Code: C-20
Course Name: Strategy and Game Theory
Course outcomes:

a) To introduce to the students the basics of game theory (Module I)
b) To familiar the students with cooperative and non-cooperative games (Module II)
c) To acquaint the students with the concepts of voting theories and auctions (Module III)
d) To help students apply game theory concepts using case studies. (Module IV)

Module I: Basic concepts of game theory
An Overview of Microeconomic Models Relevant to Game Theory
An Introduction to The Motivation for Game Theory
Revisiting The Prisoner's Dilemma
The 2x2 Form Standard Model
Dominance
Nash Equilibrium
SPNE

Module II: Cooperative and Non-cooperative games
Zero Sum Games
General Sum Games
The Coordination Problem
Cooperative Games
Non-cooperative Games
Decision Making and Uncertainty
Reciprocative Decision Making
Case Studies

Module III: Voting theories and Auctions
Voting Theory
Voting Strategies
Auctions
Types of Auctions
Auction Design
Elicitation

Scoring Rules
Adaptive Decision Making

Module IV: Application
Case Studies: Pricing, Marketing, Strategy, Hr, Finance, Taxation, Dominant Assurance Contracts, Compliance, Incentive Design.

Suggested Readings:
Books:
1. Dixit, A., 2009, Games of Strategy, W. W. Norton & Company.
2. Dixit, A., & Nalebuff, B. J., 2010, The Art of Strategy, W. W. Norton & Company.
3. Pastine, I., Pastine, T., & Humberstone, T., 2017, Introducing Game Theory: A Graphic Guide, Icon Books Ltd.
4. Spanie, W., 2011, Game Theory 101: The Complete Textbook, CreateSpace Independent Publishing Platform.

Course Code: C-21

Course Name: Advance Econometrics (Panel Data and Time Series) (with R)

Module 1:

Seemingly Unrelated Regression (SURE): Estimation by OLS, GLS and FGLS, testing for structural change and aggregation bias, case of autoregressive errors

Module 2: Time Series:

Introduction to Time Series Analysis: The nature of time Series data; Examples of time Series Regression Models: Static Models: Finite Distributed Lag Models. Trends and Seasonality: Characterizing Trending Time Series, Using Trending Variables in Regression Analysis. A Detrending Interpretation of Regressions with a Time Trend, Computing R-Squared when the Dependent Variable Is Trending Seasonality

Stationary Time-Series Models: Stochastic Difference Equation Models, ARMA Models, Stationarity, Stationarity Restrictions for an ARMA (p, q) Model, The Autocorrelation Function, The Partial Autocorrelation Function, Sample Autocorrelations of Stationary Series, Box–Jenkins Model Selection, Properties of Forecasts, A Model of the Interest Rate Spread, Seasonality, Parameter Instability and Structural Change.

Models with Trend: Deterministic and Stochastic Trends, Removing the Trend, Unit Roots and Regression Residuals, The Monte Carlo Method, Dickey–Fuller Tests, Examples of the ADF Test, Extensions of the Dickey-Fuller Test, Structural Change, Power and the Deterministic Regressors, Panel Unit Root Tests, Trends and Univariate Decompositions

Multiequation Time-Series Models: Intervention Analysis, Transfer Function Models, Estimating a Transfer Function, Limits to Structural Multivariate Estimation, Introduction to VAR Analysis, Estimation and Identification, The Impulse Response Function, Testing Hypothesis, Structural VARs. , The Blanchard and Quah Decomposition.

Cointegration and Error-correction Models: Linear Combinations of Integrated Variables, Cointegration and Common Trends, Cointegration and Error Correction, testing for Cointegration -The Engle–Granger Methodology, Illustrating the Engle-Granger Methodology, Cointegration and Purchasing-Power Parity, Characteristic Roots, Rank, and Cointegration, Hypothesis Testing, Illustrating the Johansen Methodology, Error-Correction and ADL Tests, Comparing the Three Methods

Modeling Volatility: Economic Time Series- The Stylized Facts, ARCH Processes, ARCH and GARCH Estimates of Inflation, A GARCH Model of Risk, the ARCH-M Model, Additional Properties of GARCH Processes, and Maximum Likelihood Estimation of GARCH Models.

Module 3: Panel Data

Introduction Panel Data: Some Examples, Benefits and Limitations

The One-way Error Component Regression Model: Introduction, The Fixed Effects Model, The Random Effects Model, Fixed vs Random, Maximum Likelihood Estimation, Prediction

The Two-way Error Component Regression Model: Introduction, The Fixed Effects Model, Testing for Fixed Effects, The Random Effects Model, Maximum Likelihood Estimation, Prediction

Test of Hypotheses with Panel Data: Tests for Poolability of the Data, Tests for Individual and Time Effects: The Breusch–Pagan Test, King and Wu, Honda and the Standardized Lagrange Multiplier Tests, Gourieroux, Holly and Monfort Test, Conditional LM Tests, ANOVA F and the Likelihood Ratio Tests; Hausman's Specification Test

Introduction to Dynamic Panel Data Models

Note: Students will be taught software packages for performing econometric applications. Computer exercises will be given to students.

Basic Reading List

Baltagi, B.H. (2008), Econometric Analysis of Panel Data, 4th Edition, Wiley

Wooldridge, J. (2002), Econometric analysis of Cross Section and Panel Data

Wooldridge, J. (2009), Introductory Econometrics, 4th Edition, South-Western College Pub.

Hsiao, C. (2003), Analysis of Panel Data, Cambridge University Press, Cambridge.

Walter Enders (2008), Applied Econometrics Time series, Wiley India

Hamilton, JD (1994) Time Series Analysis. Princeton University Press, New Jersey.

Judge, G.G., Griffiths, W.E., Hill, R.C., Lutkepohl, H. and Lee, T.C. (1985), The Theory and Practice of Econometrics, 2nd edition John Wiley and Sons, New York.

Johnston, J. and Dinardo, D., Econometric Methods, McGraw Hill, New York.

Lutkepohl, Helmut (2007) New Introduction to Multiple Time Series Analysis, Springer, New York

Rao, P., Miller, R. L. (1971), Applied Econometrics, Wadsworth Publishing Company.

Course Code: In-03
Course Name: Introduction to Sociology
Objective:
The course covers the fundamentals of sociological thinking, basic sociological concepts, Classical sociological theory, and key concerns in Indian sociology. This course is designed to help students comprehend the significance of studying society from a sociological perspective.

Module I
Why Sociology?
Sociological Imagination – Wright Mills
Coming Crisis of Western Sociology – A. W. Gouldner

Module II
Basic Concepts in Sociology
Society
Social Stratification (Caste/Class/Gender/Race)
Groups
Socialization
Culture

Module III
Classical Sociological Thought
Origin of Sociology: Enlightenment, Industrial Revolution, French Revolution
August Comte - Positivism
Classical Thinkers – Karl Marx, Emile Durkheim, Max Weber

Module IV
Sociology of India
Casteism
Secularism
Globalization
Agrarian Crisis
Social Movements

Recommended Readings:
Mills, C.W. 1959. The Sociological Imagination. Oxford University Press, New York.
Gouldner, A. W.1971. The Coming Crises of Western Sociology. London: Heine Mann.
Haralambos and Holborn. 2007. Sociology: Themes and Perspectives. Collins, London.
Abraham, M. F. and Morgan, J. H. 1996. Sociological Thought. Madras. MacMillan, India.
Aron, Raymond. 1982. Main Currents in Sociological Thought. Vol. I & II. Penguin, Books. New York.
Lewis, Coser. 1979. Masters of Sociological Thought. Harcourt, Harcourt Brace, Jovanovich. New York.
Ken, Morrison. 1995. Marx, Durkheim, Weber: Formation of Modern Social Thought. Sage. London.
Ritzer, George. 6th (ed.) 1996. Sociological Theory. Tata McGraw Hill. New Delhi.

Ray, Larry J. 2010. Theorizing Classical Sociology. Tata McGraw Hill. New Delhi.
Deshpande, S. 2003. Contemporary India: A Sociological View. Viking, University of Michigan.
Dipankar Gupta (ed.). 1992. Social stratification. Second enlarged edition. (Oxford in India Readings in Sociology and Social Anthropology.) xvii, 518 pp. Delhi, etc.: Oxford University Press.

Course Code: PS-02
Course Name: Academic Writing / Decision Making
Objectives

a) To understand the importance of academic writing
b) To familiarise students with the ethics of academic writing and the concept of plagiarism
c) To understand the basic skills of writing a literature review
d) To understand the basic skills of research paper writing, review paper writing, and thesis writing.
e) To familiarise students with the process of research proposal writing and conference abstract formation.

Module I

Academic & research writing: Introduction; Importance of academic writing; Basic rules of academic writing
English in academic writing I & II; Styles of research writing

Module II

Plagiarism: Introduction; Tools for the detection of plagiarism; Avoiding plagiarism, Writing with AI - Prompt Engineering for academic writing.

Module III

Literature review: Introduction, Source of literature; Process of literature review
Online literature databases; Literature management tools.
Citation formats, bibliography analysis
Tools and techniques: Note taking tools- Zotero and its uses
AI amd LLM's for research and citation; consensus.ai, Elicit- thor advantages and disadvantages.

Module IV

Thesis statement, Context and hook, reading and summary writing.
How does research question, objective and hypothesis fit together. Why is this important?
Appendix - composition, how to make the decision.

Course Code: E_5/S_5
Course Name: Elective 5/Specialization 5

Course Code: E_6/S_6
Course Name: Elective 6/Specialization 6

Course Code: C-22

Course Name: Behavioural Economics

Course outcomes:

a) To introduce to the students the basic concepts of Behavioral Economics (Module I)
b) To familiarize students with the application in behavioral economics.

Module I: Basic concepts of Behavioral Economics

Introduction to Behavioral Economics Origins of Behavioral Economics
Decision-making Under Neo-classical Economic Framework- Rationality Optimization
Role of Intuition
Emotions, Beliefs in Decision Making Bounded Rationality Judgment Under Risk & Uncertainty Heuristics & Biases Heuristics
Representativeness
Substitution
Availability
Affect
Anchoring
Framing Biases: Cognitive and Emotional Biases

Module II: A Behavioral Approach to Utility Theory

Choice Under Risk & Uncertainty Expected Utility Prospect Theory
Reference Points
Risk Concept and Understanding
Loss Aversion
Shape of Utility Function
Decision Weighting
Probabilistic Judgment.
Mental Accounting Framing Mental Accounts Fungibility & Labels
Hedonic Editing

Module III: Behavioral Choice Theory

Intertemporal Choice, Temporal Choice, Construal Level Theory, Valuation Of Delayed Consumption Preferences For Sequences Of Outcomes, Hyperbolic Discounting, Preference Reversal

Module IV: Applications of Behavioral Economics

Behavioral Game Theory Social Preferences: Fairness, Trust, Cooperation, Reciprocity
Norms Limited Strategic Thinking Choice Architecture: Nudge, Nudge Vs. Boost, Behavioral Public Policy.

Suggested Readings:

Books:

1.D.Kahneman, Thinking Fast and Slow, 2011, Allen Lane, Penguin Books
2.Dhami, S., 2016, The Foundations of Behavioral Economic Analysis. Oxford University Press.
3.E.Cartwright, 2011, Behavioural Economics, Routledge
4.Erik Angner, "A Course in Behavioral Economics", Palgrave Macmillan

5.G.Loewenstein, 2007, Exotic Preferences: Behavioural Economics and Human Motivation, Oxford University Press
6.M.Altman, 2007, Handbook of Contemporary Behavioural Economics: Foundation and Developments, Prentice Hall India
7.Mind, Society, and Behavior. (2015). World Development Report.
8.Ogaki, Masao, Tanaka, Saori C., & Integration with Traditional Economics. (n.d.). Behavioral Economics: Toward a New Economics. Springer.
9.Wilkinson, N., & Klaes, M., 2012, An Introduction to Behavioral Economics (2nd ed.). Palgrave Macmillan

Course Code: ICT-02

Course Name: Business Analytics (Using R and Python)

Course outcomes:

a) To develop a proficiency in analyzing data using different techniques.
b) To learn how to build and apply predictive models to forecast future outcomes.
c) To gain knowledge of business outcomes.
d) To apply optimization techniques to solve business problems.
e) To understand the role of business analytics in strategic decision making.
f) To learn skills and techniques for the applcation of R.

Module 1: The need for Analytics and Understanding Analytics

Decision Making – Heuristics and Biases
The need for analytics
Impact of analytics on business
Being analytically competitive
The difference between analytics and BI
Introduction to the business Analytics model
Types of analytics
Models and algorithms in Analytics
The Analytics Methodology

Module 2: Tool and Tech Landscape

A review of technology used in data storage, data processing, and data science
Popular tools used in Data Science and when to use each

Module 3: Descriptive Analytics with excel and Tableau

An introduction to Tableau
Using descriptive statistics in analysis and reporting
Advanced reporting with Tableau

Module 4: R programming

An introduction to R
Importing and exporting data in R
Data Manipulation with R
Advanced Data Manipulation with R
Data Visualization with R

Module 5: Data Preprocessing

Data Exploration and Assessment for Data Science
Identifying and dealing with noise in Data
Preparing data for Data Science Modeling

Module 6: Predictive Models in R

Linear Regression Models and their applications
Logistics Regression Models and Their applications

Time Series Forecasting

Module 7: ML Models in R
Clustering Algorithms and application
Decision Tree Algorithms and applications
Random Forest Algorithms and applications

Module 8: Storytelling with Data
Communicating data science results
Effective presentation skills
Using Data visualizations for storytelling

Course Code: C-23

Course Name: Development Economics

Course outcomes:

a) To introduce to the students basic concepts of growth and development with measures of development (Module I)
b) To introduce to the students models of growth and the basic concepts of inequality (Module II)
c) To familiarize the students with theories of growth and development (Module III)
d) To introduce applications of development models using inter country comparisons (Module IV)

Module I: Measures of Growth and Development

Development and Underdevelopment: An Overview Background and Beginning of 'Development Economics' in The Post-World War Era, Its Elements.
Defining Economic Development.
Alternative Measures of Development.
PQLI, HDI and Its Extensions.
Development and Growth - Income as a Measure of Growth.
Human Development- Sen's Capability Approach, Development as Freedom.
Structural Features of Underdeveloped Economies.
International Variations – Development Gap
Underdevelopment as a Low-Level Equilibrium in a Multiple Equilibrium Situation – Low Level Equilibrium Trap

Module II: Growth models and Concept of Inequality

Perceptions About Development and Underdevelopment Vicious Circle of Poverty; Big Push, Balanced and Unbalanced Growth.
Dual Economy Models- Lewis Model and Its Extensions.
Harris- Todaro Migration Model.
Poverty and Inequality: Definitions, Measures and Mechanisms.
Concept of Poverty and Its Measures.
Inequality Meaning – Axioms - Commonly Used Inequality Measures.
Kuznets Curve.
Impact of Poverty and Inequality on Process of Development.

Module III: Theories of growth and development

Models of Growth and Theories of Development:
Causes of Growth: Harrod - Domar Model, Solow Model and Its Variants.
Contribution and Application of New Growth Theory - O Ring Theory - Endogenized Solow Model

Module IV: Case studies of growth and development

Cross Country Differences In Development Paths and New Development Challenges Asia With Special Reference To China and India, Africa, Latin America Millennium Development Goals
Sustainable Development Goals

Suggested Readings:
Books:

Bagchi A. K., 1982 The Political Economy of Underdevelopment, Cambridge University Press.
Debraj Ray, 1998, Development Economics, Princeton University Press.
Kaushik Basu, 1998, Analytical Development Economics, OUP.
Meier and Rauch, 2005, Leading Issues in Economic Development, OUP.
Thirlwall A. P., 2005, Growth and Development (6th and 7th Edition), Palgrave Macmillan.

Additional References:

1. Human Development Reports, Various Years

Course Code: C-24

Course Name: Introduction to Energy and Environment Economics

Course outcomes:

a) To introduce students to the fundamentals of Environmental Economics (Module I)
b) To analyse the role of public and private sector in environmental protection and regulation (Module II)
c) To introduce the basic concepts of energy economics (Module III)
d) To introduce the various techniques used to analyse the energy markets in India (Module IV)

Module I: Fundamentals of Environmental Economics

Significance of Environmental Economics, Economy and Environment Interlinkages, Eco-systems, Common Property Resources, Environment and Development Trade-off, Sustainable Development.

Module II: Role of Private and Public Sector

Role of Public and Private Sector in Environmental Protection – Rain Water Harvesting, Solid Waste management, Etc

Environmental Regulation in India: Air and Water Acts, Fiscal Incentives, Enforcement and Implementation Issues, Emerging Options – Eco-taxes and Eco-subsidies

Case Studies On Pollution Control in India.

Module III: Fundamentals of Energy Economics

The Fundamentals of Energy Economics - Demand and Price Formation in Energy Markets - Evolution of Energy Markets in India - The Electricity Act (2003) And Its Impact On Energy Markets in India

Module IV: Analysis Techniques

Techniques Specific to Energy and Electricity Markets in India: Risk Management, Futures Markets and Derivatives. Renewable Energy Policies - Comparative Analysis of These Markets from An India Vs Rest Of The World Perspective - The Role Of Ireda

Suggested Readings:

Books:

1. Muthukrishnan Subhashini (2015), Economics of Environment, Prentice Hall India Pvt Ltd.
2. Peter M. Schwarz, Energy Economics, Latest Edition, Routledge
3. Peter Zweifel, Energy Economics, Latest Edition, Springer
4. R. N. Bhattacharya (2006), Environmental Economics: An Indian Perspective, Oxford University Press, New Delhi.
5. Shogren, J Hanley, N and White, B. (2013) Introduction to Environmental Economics, 2nd edition, Oxford: Oxford University Press.
6. Singh & Shishodia (2010), Environmental Economics: Theory and Applications, Sage Publications, New Delhi.

Course Code: C-25

Course Name: Urban Economics

Course outcomes:

a) To introduce students to the basic concepts of urban economics
b) To acquaint the students with concepts of land use.
c) To familiarise the students with the problems of resource constraints in urban areas
d) To introduce the functioning of urban local governments

Module 1 Basic Concepts of Urban Economics

Introduction to Urban Economics - Scope and Dimensions
The Nature and Function of Cities
Models of Urban Development and Planning
The Urban Economy and Development Strategy
The Economics of Urban Growth
Models of Urban Growth
The Frontiers of Urban Growth
The Economics of Intra-Urban Location Decisions
Residential and industrial locations, Semi urban areas, Special townships.

Module 2 Concepts and Models of Land Use

Land Use Planning - General Urban Land-Use Models
The Determinants of Specific Land Uses
Changes in Land Uses - Land Use Policy - Land Reservation - Public Amenities - Town Planning
Small Cities Concept - Size of Liveable Areas
Space Planning - Floor Space Index Concept.

Module 3 Resource Problems

Resource problems in urbanization - Transportation, Waste management and Water - Traffic Congestion - Traffic management and Policies - Public Transport Surveillances - Route Mapping - Signal system
The Urban Environment - Environmental Pollution - Types of pollution and Management - Types of wastes: Degradable and Non-degradable - Garbage, Plastic, Biomedical Waste Managements
Sustainable development Policies.

Module 4 Urban Local Governance

Urban Local Government - Types Local Bodies and Governance
Cantonment Boards - Special Areas Improvement Trust: Functions, Problems and Limitations
Slums Areas: Locations and Problems - Slum Development Policy
Urban Poverty: Problems, Measures, and Policies
The Nature of Urban Poverty
The Causes of Poverty - Urban Crime and Management.

Suggested Readings & Books:

Black, Duncan and Henderson, Vernon (1999), A Theory of Urban Growth, Journal of Political Economy, 1999, vol. 107, no. 2, The University of Chicago.
Button, K. J. (1976) Urban Economics Theory and Policy, Palgrave Macmillan UK.

Duranton, G. (2007). Urban Evolutions: The Fast, the Slow, and the Still. American Economic Review, 97 (1), 197-221. http://dx.doi.org/10.1257/aer.97.1.197.
Hartwick, John M. (2015) Urban Economics, Routledge; 1st edition.
Henderson, J. V. (1974) The Sizes and Types of Cities, The American Economic Review, Vol. 64, No. 4 (Sep., 1974), pp. 640-656, URL: https://www.jstor.org/stable/1813316 Accessed: 05-10-2018 12:02 UTC.
O'Sullivan, Arthur (2012) Urban economics, 8th Ed., McGraw-Hill/Irwin
Rakesh A Mohan (1978) Urban Economic and Planning Models Assessing the Potential for Cities in Developing Countries, OCP- 25, World Bank.

Course Code: C-26
Course Name: Analytics Project Work/A course on Evaluation and Monitoring*

Course Code: C-27
Course Name: Indian Economy
Course outcomes:
CO1- Examine the scope of agricultural sector in Indian economy
CO2- Explain the role of service and manufacturing sector for the Indian economy
CO3- Discuss major dilemmas faced by Indian economy

Module 1
Evolution of Indian Economy, Major issues grappling the agricultural sector, Role of MSP in Indian agriculture and its impact on the Indian economy, Scope for technological intervention in the sector (Case study approach)

Module 2
Service Sector as engine of growth, Challenges and opportunities in service sector, New Industrial Policy-2023, Micro, Small and Medium Scale Industries (MSMEs)- Role, problems and remedies, Role of PSUs in Indian Economy, GDP Sectoral contribution and employment contribution by each sector and the way forward

Module 3
Debates- Missing middle problem, Jobless growth, Demographic dividend, Is the economy better off by being service driven, Nationalization VS Privatization

Course Code: C-28

Course Name: History of Economic Thought

Course outcomes:

a) To introduce the students to the early history of economic thought (Module I)
b) To familiarize the students with the British political economy (Module II)
c) To acquaint the students with the impact of socialist thought on economic thinking (Module III)
d) To introduce to the students the Indian Economic Thought (Module IV)

Module I: Early History

Mercantilism & Physiocrats - Limitations of National Resources. Importance of Foreign Conquest, Colonization and Trade, Role of State in Foreign Trade, Definition of Wealth and The Ways in Which to Augment It, Importance of The Balance of Trade, Works of Francis Bacon, Thomas Mum, Josiah Child, John Cary, Charles Davenant, John Stuart Mill

Age of Enlightenment – France, Italy, Scotland.

The Physiocratic School.

Definition of Surplus.

The Organization of Economic Activities and Transactions.

The Tableau Économique Works of Jacques Turgot, Francois Quesnay, Richard Cantillon.

Module II: British Political Economy

British Political Economy - Nature of The Surplus, Source of Value, Measure of Value, Market Prices and Natural Prices, Profits and Wages, Gross and Net Revenue (National Income), Income Distribution, Works of Adam Smith, David Ricardo, Robert Malthus, Objections Raised by J. B. Say, Charles Dupuit, W Stanley Jevons, and Leon Walras, J.M. Keynes

Module III: Socialism

Socialism - Rise of Socialist Ideas, Political Background, Ricardian Theory Of Rent, Nationalization Of Land, French Socialists, Marxism, Marx's Writings In Theoretical Economics. The Marxian Twist, Marxism Post – 1991 - Schumpeter's Critique

Module IV: Indian Economic Thought

Indian Economic Thought - Early Indian Economic Thought

Chanakya's Arthashastra

Colonial Economic Policies, Unfair Treatment of the Colonies, Nationalist Response, Swadeshi Movement. Economic Ideas of M. G. Ranade, Dadabhay Nowrosjee, Gopal Krishna Gokhale, Dr. B. R. Ambedkar, M.K. Gandhi

Suggested Readings:

Books:

1. Faccarello, G., & Kurz, H. D., 2016, Handbook on the History of Economic Analysis, Edward Elgar Pub.
2. Schumpeter, J., 1996, History of Economic Analysis, Oxford University Press.

Course Code: In-04

Course Name: India's Constitution and Political System

Course Code: O-02

Course Name: Indian Economic History

This course aims to provide a comprehensive understanding of the evolution of the Indian economy from the Battle of Plassey in 1757 to Independence in 1947. The primary focus will be on the period post-1857, examining the impacts of colonial policies, trade dynamics, socio-economic changes, and the transition towards independence. Through exploring themes such as trade, religion, sociology, conflicts, famines, monetary and fiscal policy, students will gain insights into how these factors influenced the structure and output of the Indian economy. The course equips students to critically analyze historical economic data, understand the complexities of economic development under colonial rule, and appreciate the socio-political factors that shaped India's economic landscape.

Module I: Prelude to Economic Transformation (1757-1857)

Understanding this period is crucial for grasifying the foundational shifts that set the stage for the economic policies and transformations in the later years of colonial rule.

Overview of the Indian Economy Pre-1757

Essential Reading: Tirthankar Roy, "The Economic History of India, 1857-1947", Introduction.

The Impact of Early Colonial Policies

Essential Reading: Irfan Habib, "The Agrarian System of Mughal India, 1556–1707".

Module II : The Foundations of Colonial Economy (1858-1914)

This era is significant for its profound impact on the structure of the Indian economy, laying the groundwork for modern economic challenges and developments.

The Establishment of British Colonial Rule and Its Economic Implications

Essential Reading: David Washbrook, "India, 1818-1860: The Two Faces of Colonialism".

Trade, Famine, and the Drain Theory

Essential Reading: Mike Davis, "Late Victorian Holocausts: El Niño Famines and the Making of the Third World".

Optional: Romesh Dutt, "The Economic History of India under Early British Rule".

Module III: Structural Changes and Economic Policies (1914-1947)

To examine the economic ramifications of the World Wars, the Great Depression, and the rise of economic nationalism within India. It is pivotal for understanding how global events and domestic responses shaped India's economic policies and development trajectory towards independence.

Impact of World Wars on Indian Economy

Essential Reading: B.R. Tomlinson, "The Economy of Modern India, 1860-1970".

The Great Depression and Its Effects

Essential Reading: Dietmar Rothermund, "An Economic History of India: From Pre-Colonial Times to 1991".

Module IV: Towards Independence and Partition (1930-1947)

This period is critical for comprehending the economic challenges faced by India at the dawn of independence and how they influenced post-1947 economic planning and policies.

National Movement and Economic Ideologies

Essential Reading: Bipan Chandra, "India's Struggle for Independence".

The Partition of India: Economic Consequences and the Legacy of Colonialism

Essential Reading: Percival Spear, "India: A Modern History".

Reading List:

Tirthankar Roy, "The Economic History of India, 1857-1947".
Irfan Habib, "The Agrarian System of Mughal India, 1556–1707".
David Washbrook, "India, 1818-1860: The Two Faces of Colonialism".
Mike Davis, "Late Victorian Holocausts: El Niño Famines and the Making of the Third World".
B.R. Tomlinson, "The Economy of Modern India, 1860-1970".
Dietmar Rothermund, "An Economic History of India: From Pre-Colonial Times to 1991".
Bipan Chandra, "India's Struggle for Independence".
Percival Spear, "India: A Modern History".

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