

**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)**  
**3 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-world 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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26.	B-A-26	International Trade: Pure Theory
27.	B-A-27	Indian Public Finance
28.	B-A-38	Indian Economy: A Sectoral Approach
29.	B-A-29	Money Banking & Financial Markets
30.	B-A-30	Analytics Project Work
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**Course Code: B-A-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: B-A-02**

**Course Name: Introduction to Statistics with Spreadsheet & 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: B-A-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:**

1. 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*.
2. Pandey, I.M., 2018, *Financial Management* (11th Edition), *Vikas Publishers*.
3. Shim, J.K and Spiegel, J.G., 2009, *Financial Management* (3rd Edition), *Schaum's Outlines Mcgraw-Hill Education*



**Course Code: B-A-04**

**Course Name: Database Management Systems**

**Course Outcomes:**

- a) To acquaint students with the importance of working with data in an organization (Module I)
- b) To introduce to students the concept of a database management system (Module II)
- c) To familiarize students with data retrieval practices from data warehouses (Module III)
- d) To familiarize students with intermediate concepts in data warehousing (Module IV)

**Module I: Designing a Database, and Why it Matters**

RDBMS Concepts

Tables, Rows, Fields, Data Types

Data Normalization

Database Design

Create, Alter and Drop Database

Create, Alter and Drop Table

**Module II: Building Out an RDBMS**

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

Performance Tuning

**Module III: Data Warehousing, An Introduction**

What is Data Warehousing?

Types of Data Warehouse

General Stages in Data Warehouse

Importance of Data Warehouse in Enterprises

Characteristics of Data Warehouse

Components of Data Warehouse

Data Warehouse Terminology and Concepts

Three-Tier Architecture

Data Warehouse Best Practices

Process Overview

Steps in ETL

ETL Tools

ETL Overview

ETL Vs ELT

## **Module IV: Intermediate Concepts in Data Warehousing**

Data Models: Concepts, Overview

Introduction to OLAP

Types of OLAP Systems

Basic Analytical Operations in OLAP • OLTP Vs OLAP: Differences

Elements of Dimensional Data Model

Steps of Dimensional Modelling

Types of Schema • What is Data Mart?

Need for a Data Mart

Types of Data Mart

Implementation Steps

Data Mart Vs Data Warehouse: Differences • What is Data Lake?

Necessity of a Data Lake

Key Concepts of Data Lake • Data Lake Vs Data Warehouse • What is BI?

Importance of BI

DW and BI Tools Today

**Course Code: B-A-05**

**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: B-A-06**

**Course Name: Communication and Presentation Skills**

**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: B-A-07**

**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:**

Cohen, K.J. and Cyert, R.M., 1964, *Theory of the Firms: Resource Allocation in a Market Economy*, Prentice Hall.

Ferguson, C. E. and Gould, J.P., 1980, *Microeconomic Theory*, Aitbs Publishers and Distributors.

Hal R. Varian, 2010, *Intermediate Microeconomics, a Modern Approach*, W.W. Norton and Company/Affiliated East-West Press (India).

Karl E. Case and Ray C. Fair, 1993, *Principles of Economics*, Pearson Education Inc.

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

**Course Code: B-A-08**

**Course Name: Intermediate Statistics Using Spreadsheets and 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, (12<sup>th</sup> Edition), Cengage India.

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: B-A-09**

**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

#### **Suggested Readings:**

##### **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: B-A-10**

**Course Name: Business Communication**

**Course Outcome:**

- a) To introduce the basics of business communication (Module I)
- b) acquaint the students with the basics of written communication (Module II)
- c) To introduce the nuances of verbal communication (Module III)

**Module I: Introduction to Business Communication**

Understanding The Business Communication  
Process, Functions, Characteristics and Types of Business Communication  
Communication Network in an Organization  
Aids and Banes of Technology in Business Communication  
Choosing The Right Channels  
Modes for Different Types of Communication Agenda  
Listening Skills

**Module II: Basics of Written Communication**

Written Communication Fundamentals  
Principles, Process and Events of Written Communication  
Tips and Tricks for Written Communication  
Writing of Business Letters, Applications, Enquires, Replies etc  
Structure and Fundamentals of Report Writing and Other Business Documents

**Module III: Nuances of Verbal Communication**

Psychological and Cultural Dimensions in The Formal World  
Communicating with Different Hierarchical Levels Communicating in  
Cross-Cultural Setting  
Handling Difficult Situations and Conflicts  
Communicating to Convince and Negotiate  
Communicating for Feedback  
Interviews, Group Discussions and Meetings.

**Suggested Readings:**

**Books:**

Sharma, R. C., & Mohan, K., 2017, Business Correspondence and Report Writing: A Practical Approach to Business & Technical Communication, Tata Mcgraw-Hill.  
Thill, J. V., & Bovée Courtland L., 2017, Excellence in Business Communication, Pearson.

**Additional References:**

Practical Through Newspaper Readings, Articles, Blogs, Books and Other Reading Materials.  
Videos, Audios, Speeches, Writings and Other Material for Exercises

**Course Code: B-A-11**

**Course Name: Introduction to Cost and Management Accounting**

**Objective**

To equip students with the basic skills required to understand concepts in accounting, and their applicability to both economics as well as financial economics.

**Course Outcome:**

- a) To introduce students to the basic principles of accounting (Module I)
- b) To familiarise the students with the basic concepts of costing (Module II)
- c) To help students apply concepts of cost and accounting (Module III)
- d) To introduce the students to the fundamentals of pricing. (Module IV)

**Module I: Principles of Accounting**

Management Accounting, Cost Accounting, Financial Accounting

Direct and Indirect Costs, Variable and Fixed Costs, Total Costs and Unit Costs

Prime Costs and Conversion Costs, Labour Costs, Overtime Premium and Idle Time. Calculating the Costs of Products and Services

**Module II: Principles of Costing**

Job Costing, Process-Costing, Overhead Costs and Their Allocation. Activity-Based Costing, Carrying Cost of Inventories

**Module III: Application to Business Planning**

Basic Concepts, Contribution Margin and Gross Margin Method

Break-Even Point and Target Income, Operating Leverage and Sensitivity of Costs. Cost Planning

**Module IV: Principles of Pricing**

Cost-Plus Pricing, Cost-Plus Target Rate of Return Pricing

Product-Line Pricing, Standard Costing, Profit and Responsibility Centers

Strategic Pricing Including Penetration Price, Skimming Price, Entry Preventing Price, charm Pricing

**Suggested Readings:**

**Books:**

Charles T. Horngren, Shrikant Datar, George Foster, Madhav Rajan, Christopher Ittner., 2008, Cost Accounting: A Managerial Emphasis, Pearson.

Joel Dean, 1951, Managerial Economics, Prentice Hall.

M. Y. Khan & P. K. Jain, 2006, Management Accounting, Tata McGraw Hill.

**Course Code: B-A-12**

**Course Name: Introduction to Sociology**

**Course Outcome:**

- a) To introduce to the students the basic concepts of Sociology (Module I)
- b) To understand the development of Sociology (Module II)
- c) To study some of the sociological thinkers (Module III)
- d) To acquaint the students with schools of sociological thought. (Module IV)

**Module I: Basic Concepts of Sociology:**

Social, Groups, Socialization, Social Control

Culture, Multiculturalism, Cultural relativism, Ethnocentrism

**Module II: Development of Sociology:**

Social and Political Forces, Enlightenment, French Revolution, Industrial Revolution

Intellectual Forces that Shaped the Development of Sociology

**Module III: Sociological Thinkers:**

Alex de Tocqueville, August Comte

Herbert Spencer, Emile Durkheim, Karl Marx, Max Weber

**Module IV: Schools of Sociological Thought:**

Positivist School-Comte, Conflict School-Marx. Ralf Dahrendorf, Coser, Interpretative School-Weber

**Suggested Readings:**

**Books:**

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.

Haralambos and Holborn, 2007, Sociology: Themes and Perspectives, Collins, London.

Ken, Morrison, 1995, Marx, Durkheim, Weber: Formation of Modern Social Thought, Sage. London.

Lewis, Coser, 1979, Masters of Sociological Thought, Harcourt Brace, Jovanovich, New York.

Ray, Larry J., 2010, Theorizing Classical Sociology, Tata McGraw Hill, New Delhi

Ritzer, George, 1996, Sociological Theory (6th Edition), Tata McGraw Hill, New Delhi

**Course Code: B-A-13****Course Name: Demography****Objective**

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. To get the overview of much solicited demographic techniques of estimating life expectancy and future population size. It also includes understanding the thinking and planning about the future population by setting some short term and long term goals.

**Course Outcomes:**

- a) To understand the fundamentals of population studies and how it is related to other sciences and social sciences (Module I)
- b) To understand the important concepts of size, growth, distribution and characteristics of Indian population. (Module II)
- c) To acquaint students with how populations, change over time, and why (Module III)
- d) To introduce students to intermediate concepts in demography (Module IV)

**Module I: An Introduction to Demography**

Introduction to Demography and Population Studies

Interdisciplinary Nature of Population Studies

World Population Growth

Sources of Data -Demographic Year Books, Population Census, Sample Registration System

**Module II: India's Demography**

Population of India

Size and Growth of Indian Population

Age, Sex Structure, Literacy, Work Force, Household Level

Housing, Sanitation, Assists and Amenities

Structure of Population

Age Pyramids

Population Ageing

Demographic Dividend

Sex Ratio

Urbanization

Population Differentials by States

**Module III: The Dynamics of Demography**

Dynamics of Population Change

Fertility

Mortality

Migration

**Module IV: An Introduction to The Tools of Demographic Theory**

Selected Techniques

Life Tables  
Population Projections  
Population Policy

**Suggested Readings:**

**Books:**

- Bhende, A. A., & Kanitkar, T., 2014, Principles of Population Studies, *Himalaya Publishing House*.
- F, R., & Pathak, K. B., 2016, In Techniques of Demographic Analysis., Essay, *Himalaya Publishing House*.
- Gelbard, A., Haub, C., & Kent, M. M., 1999, World Population Beyond Six Billion, *Population Reference Bureau*.
- Jain, A. K., & Visaria, P., 1988, Infant Mortality in India: Differentials and Determinants, *Sage Publications*.
- Jones, G. W., & Visaria, P. M., 1997, Urbanization in Large Developing Countries: China, Indonesia, Brazil, and India, *Clarendon Press*.
- Newell, C., 1999, Methods and Models in Demography, *John Wiley & Sons*.
- Pressat, R., 2008, Demographic Analysis: Projection on Natality, Fertility and Replacement, *Aldine Transaction*.
- Preston, S. H., Heuveline, P., & Guillot, M., 2001, Demography: Measuring and Modeling Population Processes, *Blackwell Publishing*.
- Shryock, H. S., & Siegel, J. S., 1971, The Methods and Materials of Demography, *U.S. Bureau of The Census*.
- Spiegelman, M., 1980, Introduction to Demography, *Harvard University Press*.
- Srinivasan, K., 1998, Basic Demographic Techniques and Applications, *Sage Publications*.
- Weeks, J. R., 2005, Population: An Introduction to Concepts and Issues (9th Ed.), *Wadsworth Publishing Co Inc*.

**Course Code: B-A-14****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: B-A-15****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: B-A-16**

**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: B-A-17**

**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

Transshipments 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  
Lagrangian 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:**

1. Taha, H., 2011, Operations Research: An Introduction (9th Ed.), *Pearson*.

**Course Code: B-A-18**

**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* (8<sup>th</sup> Edition), *Pearson*.

Varian, H. R., 2010, *Intermediate Microeconomics* (8th Ed.), *WW Norton and Company*.



**Course Code: B-A-19**

**Course Name: Introduction to Marketing and Pricing Strategy**

**Objective**

To learn the terminology, concepts, and tools that marketers use, and highlight the issues that managers (in marketing and across the other functional areas within the organization) encounter in creating, capturing, and sustaining value. To exposit the various sources of information available to managers to generate insight into customer preferences and remain apprised of the ever-changing marketplace. To provide students with an opportunity to evaluate marketing strategies and offer recommendations so as to enhance firm performance.

**Course Outcomes:**

- a) To introduce to the importance of marketing in value creation (Module I)
- b) To familiarise the students with the role of consumer behaviour in a firms' decision making process (Module II)
- c) To introduce to the students, the concepts of market segmentation (Module III)
- d) To familiarise the students with the basic concepts of Go-To Market strategies (Module IV)

**Module I: Role of Marketing**

The Role of Marketing in Creating, Capturing and Sustaining Value  
Identifying Marketplace Opportunities and Threats

**Module II: Consumer Behaviour**

Understanding A Firm's Strategic Orientation(S)  
Gathering Information to Guide Marketing  
Strategy  
Measuring Market Demand  
Analyzing Customer Behavior  
Examining Diffusion of Innovation  
Consumer Behavior Case

**Module III: Market Segmentation**

Segmenting The Marketplace, Selecting The Target Market, Positioning The Firm's 'need-satisfying Offering'  
Designing Products and Services That Create Meaningful Customer Value, Developing The Augmented Product as a Means by which to transcend Commoditization  
Developing and Managing Brands (National Brands Vs. Private-labels)

**Module IV: Go to Market Strategies**

Going to Market  
Designing The Marketing Channel  
Managing The Marketing Channel Shifting from Cost to Value-based Pricing Strategies  
Acquiring and Retaining Customers Assessing Customer Lifetime Value  
Legal & Ethical Considerations in Marketing  
Course Review  
Course Wrap-up  
Team Presentation: "Our Real-life Observations and Understanding of Marketing Concepts"

**Suggested Readings:**

**Books:**

Kotler & Armstrong, 2018, Principles of Marketing (Latest Edition), Pearson Education.

Kotler, Keller, Koshy, Jha, 2017, Marketing Management – A South Asian Perspective (Latest Edition), Pearson Education.

**Course Code: B-A-20****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: B-A-21**

**Course Name: Econometrics with R and Python**

**Objective**

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

**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: B-A-37****Course Name: Indian Economy: An Overview****Course Outcomes:**

- a) To explore key milestones and policy shifts in India's economic journey since Independence, analyzing their rationale and implications.
- b) To connect historical economic developments with contemporary issues to provide students with a contextual understanding of India's economic challenges and opportunities.
- c) To foster critical thinking by evaluating the impact of economic policies on diverse sectors and stakeholders, encouraging students to assess their effectiveness.
- d) To cultivate research skills and awareness of current economic discourse through curated readings from academic sources, newspapers, and online resources.

**Module I: Historical Background to the Indian Economy**

Pros and cons of colonial rule, The status of Indian economy on the eve of Independence

**Module II: Planning in India**

Planning in India: What was attempted? What was achieved? What was lost?

To analyse the performance of the Indian economy during the first four decades since independence.

**Module III: Economic Reforms in India**

The need for Reforms: Identifying the necessity for change and understanding the specific Reforms that have been implemented. Examining the transformation of India from a slow growth economy to a high growth economy.

A Critique of Liberalization in India: Analysing the shortcomings, the reasons behind them, and the steps that still need to be taken.

**Module IV: Basic Parameters of the India economy**

Overview of the Indian Economy: Trends in Composition and rate of growth of Output (various sectors).

Structural changes in the economy; Changes in Trends in Composition and rate of growth of Employment: various sectors.

Trends in Savings and Investments, Trends in Per capita Income, Population and Demographic Dividend.

Indian economy in the World Economy: How does India fare in comparative terms

**Module V: Poverty, Unemployment and Social Security in India**

Measurement of poverty, Income, and Multidimensional Poverty.

Unemployment - Trends and Features.

Need for Social Security in India: Midday meals, right to Work- Employment Guarantee

Scheme, Right to Education, Right to health

**Reading List:**

Module I: Readings

1. Balakrishnan P. (2022) Indian Economy from Nehru to Modi, Permanent Black, New Delhi, Introduction.
2. Kapila Uma 2022 Indian Economy: Performance and Policies, 22 nd edition, Academic Foundation, Chapter. 3 – India's economy at Independence

Module II: Readings

1. Balakrishnan P. (2022) Indian Economy from Nehru to Modi, Permanent Black, New Delhi. Chap 1 – Breakout; Chap. 2- Watershed

2. Kapila Uma 2022 Indian Economy: Performance and Policies, 22 nd edition, Academic Foundation. Chap. 4- Economic Planning: Evolution and Strategy

Module III Readings:

1. Balakrishnan P. (2022) Indian Economy from Nehru to Modi, Permanent Black, New Delhi. Chap 3- Return to the World; Chap 4- Momentum Lost.

2. Kapila Uma 2022 Indian Economy: Performance and Policies, 22 nd edition, Academic Foundation, Chap. 5- Economic Reforms and Liberalization.

Module IV: Reading/ Databse: RBI. CMIE, World Bank

Module V: Recommended Readings:

1. Dreze J and Sen A. India's Uncertain Glory

2. NITI Aayog: India: National Multidimensional Poverty Index: Baseline Report Based on NFHS -4 (2015-16).

### **Additional Readings:**

1. Desai Meghnad (2017) The Raisina Model, Penguin, New Delhi. Introduction.

2. Khilnani S (2004) The Idea of India, Penguin, New Delhi. Introduction: Ideas of India.

3. Mehta Pratap Bhanu (2003) The Burden of Democracy, Penguin, New Delhi. Introduction

4. Khilnani S (2004) The Idea of India, Penguin, New Delhi. Chap. 1- Temples of Future

5. Desai Meghnad (2017) The Raisina Model, Penguin, New Delhi. Chap 3 – The Economy: a Late Developer

6. Kapila Uma 2022 Indian Economy: Performance and Policies, 22 nd edition, Academic Foundation, Chap. 9 –Poverty in India

7. Kapila Uma 2022 Indian Economy: Performance and Policies, 22nd edition, Academic Foundation, Chap. 10 – Unemployment and Employment Perspective

8. Panagaria A (2020) India Unlimited: Reclaiming the Lost Glory, Harper-Collins, New Delhi. Part II – Understanding the Challenge of Transformation.

9. Bhagwati Jagdish and Arvind Panagariya(2012): ‘ India's Tryst with Destiny’. Collins Business, Noida, India. Chap will be given later

10. Joshi V 2020 India's Economic Reforms: Reflections on Unfinished Agenda Chap 3 in Kapila Uma (eds) 31 st edition Indian Economy Since Independence

11. Desai Meghnad (2017) The Raisina Model, Penguin, New Delhi. Chap 34 – A Global Power?

12. Mehta Bhanu Pratap 2005 How India Lost the Will to Reform Financial Times, Nov. 1

**Course Code: B-A-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 (2).

**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* (6<sup>th</sup> and 7<sup>th</sup> Edition), Palgrave Macmillan.

**Additional References:**

1. Human Development Reports, Various Years



**Course Code: B-A-24**

**Course Name: Research Methodology**

**Course Outcomes:**

- a) To introduce to the students the basic concepts of research methodology (Module I)
- b) To acquaint the students with methods of data collection and tabulation (Module II)
- c) To familiarise the students with tools used in data analysis and interpretation (Module III)
- d) To introduce the concepts of report writing and policy recommendations (Module IV)

**Module I: Concepts of Research Methodology**

An Introduction to Research Methodology: Formulating the Research Problems and Questions Which Emerge with The Help of Examples.

Critical Review of Literature on the Research to Be conducted: Gaps Observed In The Past Research.

Research Design: Qualitative, Quantitative, Macro Study, Case Study, Ethnographic Study; Empirical Research, Etc.

**Module II: Data Collection and Tabulation**

Data Collection: Sources of Secondary Data,

Steps Involved in Collection of Primary Data - Sampling Design, Questionnaire,

Interview Method, Observation Method, Focus Group Discussion, Etc.

Pilot Survey and Modification of Questionnaire If Necessary;

Data Entry and Cleaning; Coding, Tabulation – Preparation of File Templates Containing Variables;

**Module III: Tools for Data Analysis**

Analysis of Data Through Appropriate

Statistical Tools and Softwares

Interpretation of Results and Systematic Presentation While Preparing Research Report;

Presentation of Qualitative Data;

**Module IV: Techniques and Rules of Report Writing**

Major Conclusions and Policy Issues to be Addressed to Relevant Stakeholders;

Preparation of Bibliography and Annexures-Plagiarism Detection Methods -

Referencing Methods

**Suggested Readings:**

**Books:**

Kothari Cr, 2013, Research Methodology Methods and Techniques, New Age International (P) Limited, Publishers, New Delhi.

Uwe Flick, 2009, An Introduction to Qualitative Research (4th Edition), Sage Publications Ltd. U.K.

Walliman Nicholas, 2011, Research Methods - The Basics, Routledge (Taylor and Francis Group).

**Course Code: B-A-25**

**Course Name: Advanced Analytics Using R and Python**

**Course Outcomes:**

- a) To equip students with the latest tools and techniques used in the fields of machine learning and deep learning (Module I)
- b) To introduce students to the nuances of machine learning algorithms (Module II)
- c) To acquaint them with the algorithms used in 1,2 and multi-layered neural networks, with or without convolutions. (Module III)
- d) To introduce the students to advanced techniques in machine learning being used today (Module IV)

**Module I: Tools and Techniques of Machine Learning**

Regularization

Grid Search

Cross Validation

Regression Validation and Classifier Validation Measures

Clustering: Clustering Algorithm, Running a k-means Model in R, Deciding Optimal Number of Clusters, Profiling Clusters, Hierarchical Clustering, Single Linkage, Complete Linkage, Centroid Method

Decision Trees: Classification Trees, Understanding Purity Metrics, Gini, Entropy,

Information Gain, Creating a Classification Tree, Computing Accuracy Metrics: ROC,

AUC

**Module II: Intermediate ML Algorithms**

Random Forests,

Bagging,

Boosting,

Variable Importance Plots,

Parameter Tuning Using OOB Error,

Partial Dependence Plots

OpenCV, Read, Manipulate and Export Images, Capture Video Feeds, Extract Video Frames

Neural Network: Neurons, Activation Functions, MLP Architecture, Loss Function, Network Training, Regularisation, Hyperparameter Tuning with Example.

**Module III: An Introduction to Neural Networks**

CNN: CNN Architecture, Convolutional Layer, Pooling Layer, Full Connection, CNN

Training, Loss Function, Hyperparameter Tuning with Example

**Module IV: Modern ML and NN Techniques**

Count Vectoriser,

TF-IDF

Cosine Similarity

Supervised Learning With Text WOE

Information Value

PCA and SVD Tokenization

POS Tagging

NER Tagging  
Traversing Grammatical Trees  
Sentiment Analysis MLP  
Activation Functions  
Cost Functions  
Backprop



**Course Code: B-A-26**

**Course Name: International Trade: Pure Theory**

**Course Outcomes**

- a) To provide a fundamental understanding about the major principles and theories of international trade (Module I)
- 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: B-A-27**

**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: B-A-38****Course Name: Indian Economy: A Sectoral Approach****Objectives:**

- a) To analyze the evolution and current state of key sectors such as agriculture, industry, and service within the Indian economy, focusing on their unique challenges and characteristics.
- b) To examine the factors contributing to the development and transformation of these sectors, investigating their historical contexts and contemporary realities.
- c) To propose strategic interventions and solutions aimed at addressing the challenges faced by various sectors, with a focus on enhancing their resilience and contribution to India economic growth amidst prevailing economic conditions

**Module I: Agriculture in India**

Issues in Agricultural Development- Post 1947, Significance and evaluation of the of Green Revolution, Current scenario of the agriculture sector, factors affecting the phenomenon of Farmers' distress.

**Module II: The Industrial and the Service Economy of India**

India's Industrial Policy of 1955, New Industrial Policy of 1991, Trends in industrial and Service sector: growth, employment, output, and share in the GDP, Major achievements and failures of Indian Industries and Services. Public Enterprises, Micro, Small and Medium Scale Industries (MSMEs)- Role, problems and remedies, Role of FDI in the industrialization process, ICT based industrial development strategy- Make in India, Skill India, Start-up India. Production Linked Incentive Scheme.

**Module III: India's Foreign Trade and Balance of Payments**

India's Trade Policy, Growth of India's Exports and Imports, Implications of Trade for the Economy, Balance of Payments Issues.

**Module IV. India's Financial sector and Infrastructure**

Issues facing India's Financial Sector, Basics of Financial Inclusion, Reserve Bank of India, India's Infrastructure Development.

**Background Readings:**

1. Kohli, A. (2006): Politics of Economic Growth in India, 1980-2005, Part I and Part II, Economic and Political Weekly, April 8, 2006.
2. Varma, Pawan (2005): Being Indian, Penguin Books.
3. Wankar Parag (2023) : Economic Justice in Post-Covid India, in Fazli A. and Kundu. A (eds) in "Reimagining Prosperity", Palgrave.

**Module I. Readings:**

1. Six puzzles in Indian agriculture. India Policy Forum, 2016, Vol. 17.
2. Uma Kapila (31 st edition) Indian economy since Independence, Chaps, 18, 19, 20.
3. Datt and Mahajan (70 th edition) Indian Economy, Chaps 29, 30.
4. Meeta and Rajivlochan 2006: Farmers Suicides: Facts and Possible Policy Interventions, Pune, Yashwantrao Chavan Academy of Development Administration, Chap. 10 and Case Studies –pp 175-182
5. Gulati, A. and Fan, S. (2008): 'The Dragon and the Elephant: Learning From Agricultural and Rural Reforms in China and India'. Economic and Political Weekly June 28, 137-144.

**Additional Readings:**

1. Deshpande, R.S. and Arora, Saroj 2010 : 'Editors' Introduction', in Agrarian Crisis and Farmer Suicides, Delhi, Sage.

2. Kapila Uma (22 nd edition ) Indian Economy : Performance and Policies, Chaps. 12, 13.

**Module II Readings:**

1. Veeramani, C., Dhir, G. (2017). Make what in India? In M. Dev (ed.): India Development Report

2. Chattopadhyay, P (2001) Indian Industry: New Strategic Options, Economic and Political Weekly, 27 Jan., pp. 281-283.

3. Deakin, S., Halder, A. (2015). How should India reform its labor laws? Economic and Political Weekly, 50(12)

4. Uma Kapila (31 st edition) Indian economy since Independence, Chaps, 22, 25, 28, 29.

5. Datt and Mahajan (70 th edition) Indian Economy, Chaps 37, 38, 40.

**Additional Readings:**

1. Bhagwati, J., Panagariya, A. (2012). A multitude of labor laws and their reforms. In India tryst with destiny. Collins Business

2. Babu, Suresh M. (2018): 'Hastening Slowly: India's Industrial Growth in the Era of Economic Reforms'. Orient Black Swann, Hyderabad.

3. Basole A. (2022): Quest for an Indian Manufacturing Future, Economic and Political Weekly, June 25 and July 2, Vol. LVII, Nos. 26 and 27, pp. 40-42.

4. Ahulwalia I.J. Industrial Stagnation in India, Oxford University Press

**Module III Readings:**

1. Anand, R., Kochhar, K., Mishra, S. (2015). Make in India: Which exports can drive the next wave of growth? IMF working paper, WP/15/119. 24 2

2. Uma Kapila (ed., 31 st edition) Indian economy since Independence, Chaps. 32, 35.

3. Datt and Mahajan (70 th edition) Indian Economy, Chaps 44, 45.

4. Kapila Uma (22 nd edition ) Indian Economy : Performance and Policies, Chaps. 21, 22

**Additional Readings:**

1. Manmohan Singh (1960): India's Exports, Oxford University Press.

2. Nayyar D (1977) : India's Exports and Exports Policies in the 1980s, Oxford University Press.

**Module IV Readings:**

1. Mohan, R., Ray, P. (2017). Indian Financial sector - Structure, Trends and Turns. IMF working paper.

2. Kapila Uma (22 nd edition ) Indian Economy : Performance and Policies, Chaps. 20

3. Datt and Mahajan (70 th edition) Indian Economy, Chaps. 49, 50, 51

4. Uma Kapila (31 st edition) Indian economy since Independence, Chaps. 31.

**Additional Readings:**

1. Shetty S.L. ( 2001) :Reviving the Economy, Economic and Political Weekly, July 28, pp2824-2830

**Course Code: B-A-29**

**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
- d) (Module III)
- e) 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 (11<sup>th</sup> 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: B-A-30**

**Course Name: Analytics Project Work**

**Course Code: B-A-31****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:**

Dixit, A., 2009, Games of Strategy, W. W. Norton & Company.

Dixit, A., & Nalebuff, B. J., 2010, The Art of Strategy, W. W. Norton & Company.

Pastine, I., Pastine, T., & Humberstone, T., 2017, Introducing Game Theory: A Graphic Guide, Icon Books Ltd.

Spanie, W., 2011, Game Theory 101: The Complete Textbook, CreateSpace Independent Publishing Platform.

**Course Code: B-A-32**

**Course Name: Behavioral Economics**

**Course Outcomes:**

- a) To introduce to the students the basic concepts of Behavioral Economics (Module I)
- b) To familiarise 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:**

Kahneman, Thinking Fast and Slow, 2011, Allen Lane, Penguin Books

Dhami, S., 2016, The Foundations of Behavioral Economic Analysis. Oxford University Press.

E.Cartwright, 2011, Behavioural Economics, Routledge

Erik Angner, "A Course in Behavioral Economics", Palgrave Macmillan

G.Loewenstein, 2007, Exotic Preferences: Behavioural Economics and Human Motivation, Oxford University Press

M. Altman 2007, Handbook of Contemporary Behavioural Economics: Foundation and Developments, Prentice Hall India

Mind, Society, and Behavior. (2015). World Development Report.

Ogaki, Masao, Tanaka, Saori C., & Integration with Traditional Economics. (n.d.). Behavioral Economics: Toward a New Economics. Springer.

Wilkinson, N., & Klaes, M., 2012, An Introduction to Behavioral Economics (2<sup>nd</sup> ed.). Palgrave Macmillan

**Course Code: B-A-33****Course Name: History of Economic Thought****Course Outcomes:**

- a) To introduce the students to the early history of economic thought (Module I)
- b) To familiarise 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, Dadabhai Nowrosjee, Gopal Krishna Gokhale, Dr. B. R. Ambedkar, M.K. Gandhi

**Suggested Readings:****Books:**

Faccarello, G., & Kurz, H. D., 2016, Handbook on the History of Economic Analysis, Edward Elgar Pub.

Schumpeter, J., 1996, History of Economic Analysis, Oxford University Press.

**Course Code: B-A-34****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:**

Muthukrishnan Subhashini (2015), Economics of Environment, Prentice Hall India Pvt Ltd.

Peter M. Schwarz, Energy Economics, Latest Edition, Routledge

Peter Zweifel, Energy Economics, Latest Edition, Springer

R. N. Bhattacharya (2006), Environmental Economics: An Indian Perspective, Oxford University Press, New Delhi.

Shogren, J Hanley, N and White, B. (2013) Introduction to Environmental Economics, 2nd edition, Oxford: Oxford University Press.

Singh & Shishodia (2010), Environmental Economics: Theory and Applications, Sage Publications, New Delhi.



**Course Code: B-A-35**

**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 Management. 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*.

**B.Sc. (ECONOMICS)**  
**Foreign Language Syllabus**  
**(2019 to 2022)**



## Foreign Language 1 (FRENCH)

### Semester 1

**Course Code: B-L-11**

**Course Name: Foreign Language 1**

Hello! Introducing oneself to someone.

Presenting someone - Asking someone to introduce himself / herself. Introducing another person (friend or family)

My likes and dislikes- Discussing one's likes and dislikes with others. Filling out forms with personal details.

Writing cheques and other personal items.

Asking politely Asking someone for something. Asking someone what he/she would like to do.

Speaking about the recent past.

Fixing a rendez-vous.- Proposing to meet, accepting or rejecting and invitation and the details thereof (time, date)

Great idea!- Discussing gifts. Responding positively or negatively to an idea. Gathering information (price, quantity)

Recommended Book- Latitudes. 1 (Units 1,2,3,4,5,6)

### Semester 2

**Course Code: B-L-12**

**Course Name: Foreign Language 1**

Where is it? -Asking for and giving directions in person or over the telephone. Following a map.

Obligation, advice Expressing an obligation. Giving advice. Talking about what is and is not permissible in a particular environment.

Giving a description- "Describing a place.

Describing a day-to-day routine and putting it perspective (when, where).

A trip Describing a trip and day-to-day actions.

Stating an opinion- Comparing traits, appearances. Verbalising one's acceptance or rejection of an opinion

Timestamp- Situating an event in the past and describing it. Talking about something in the future.

Recommended Book- Latitudes. 1 (Units 1,2,3,4,5,6)

### Semester 3

**Course Code: B-L-13**

**Course Name: Foreign Language 1**

Sharing an opinion- Expressing certitude or incertitude. Stating a disapproval or an indifference.

Understanding a stand or a position and reacting to it.

Expressing one's point of view Talking about uncertainties or about uncertain events. Expressing one's fears and doubts...

Why this? Justifying a choice of a place. Stating an intention to do something.

Giving reasons for choosing one and not another Speaking about constraints that exists when justifying why one thing was chosen and not another. Explaining reasons and constraints bearing upon a decision

Expressing sentiment Expressing one's fear, discomfiture. Giving reassurances. Expressing surprise.

Expressing sentiment Expressing one's, anger, discontentment, regrets and disappointment.

Recommended Book- Latitudes. 2 (Units 1,2,3,4,5,6)

## **Semester 4**

**Course Code: B-L-14**

**Course Name: Foreign Language 1**

Giving help, lending a hand Offering to do a task. Offering assistance.

Reacting to an offer Responding favorably to an offer. Giving reassurances, promising.

Reacting to an unfavorable communication. Contesting an accusation / a reproach.

Opposing a statement / stand Expressing one's opposition. Expressing a complaint / protesting.

Cause and effect Stating cause and its consequence. Explaining a sequence of events.

Expressing a hypothesis Stating simple and complex hypotheses.

Recommended Book- Latitudes. 2 (Units 7,8,9,10,11,12)

## **Semester 5**

**Course Code: B-L-15**

**Course Name: Foreign Language 1**

Preserving the bygone era. Understanding the significance of collating and preserving a heritage self-city-world) for posterity. Use of our senses in understanding these "gifts".

Describing a place Reflecting on various types of accomodation, from housing to museums to historic structures and their purpose. The housing of the future. The world, a global village.

Up close and personal Auto biographies and portraits. Getting into the skin of a character (real or imaginary).

Direct and indirect speech.

Taking care of oneself Looking at preserving oneself and ensuring wellbeing. Respecting and living with Nature and its products (Bio products, thermal springs ...)

Ethnicity Embracing different cultures and identifying particulars. Preserving authenticity of culture and creation. European Heritage Days

Recommended Book- Latitudes. 3 (Units 1,2,3,4,5)

## **Semester 6**

**Course Code: B-L-16**

**Course Name: Foreign Language 1**

Taking the reins! Expressing one capacity to do something. Stating an interest in something. Starting a discussion. Speaking at a discussion

Do you need help? "Showing a cause and effect relationship.

Asking for help.

Expliciting an objective."

Stating an opinion "Conceding and accepting.

Arguing effectively.

Structuring a verbal interaction.

Agreeing or disagreeing."

Listing events time wise Expressing anger, despair, hope and a doubt.

Recommended Book- Latitudes. 3 (Units 6,7,8,9)

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## Foreign Language 2 (GERMAN)

### **Semester 1 & 2**

**Course Code: B-L-21 & 22**

**Course Name: Foreign Language 2**

Netzwerk Neu, A1 , Kursbuch ( Text Book) and Übungsbuch ( workbook) international level 1.  
Students can write the A 1 level international exam, necessary for Visa for Germany.

### **Semester 3 & 4**

**Course Code: B-L-23 & 24**

**Course Name: Foreign Language 2**

Netzwerk Neu, A2 Level  
Kursbuch ( Text Book) and (Übungsbuch) Workbook.  
Chapters 1 to 8

### **Semester 5 & 6**

**Course Code: B-L-25 & 26**

**Course Name: Foreign Language 2**

Netzwerk Neu A2, International Level II. Chapters 9 to 12  
And from level B1, International Level III. Chapters 1 to 7.

The Syllabus was designed to enable students to enter German University for further studies.

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