

Core Economics

Microeconomics

Course Description: This is the first in the core subjects sequence. It introduces students to topics in microeconomics that relate with consumers' and producers' decision-making problems, operation of the market system (Microeconomics i), and factor pricing and welfare economics (Microeconomics ii) by using appropriate mathematical structure. Mathematical Economics i and ii and Econometrics Laboratory in Semester III will provide additional perspectives for these topics essential to a complete appreciation of these concepts and their applications.

UE1401 - Microeconomics i: Behaviour of Consumers, Producers and Markets

Modules:

1. Introductory topics [4 hours]
 - Nature and scope of economics – opportunity cost, scarcity, production possibility frontier
 - Market system as a way to organise economic activities, welfare state
 - Microeconomics-vs-macroeconomics
 - Mankiw's ten principles of economics
2. Mechanics of price determination [10 hours]
 - Demand and supply schedules, functions, and curves
 - Law of demand and exceptions to the law of demand
 - Law of supply and exceptions to the law of supply, backward bending labour supply curve
 - Market equilibrium;
 - Movement along a demand or supply curve
 - Shifts in demand and supply curves and changing market equilibrium;
 - Consumer and producer surplus;
 - Price, income and cross-price elasticities, and their applications.
 - Relation between price elasticity and total revenue.
3. Consumer theory [20 hours]
 - Cardinal and ordinal measures of utility and assumptions governing them.
 - Law of diminishing marginal utility, water-diamond paradox.
 - Indifference curves: indifference schedule, marginal rate of substitution, price line, consumer's equilibrium, comparative statics.
 - Samuelson's revealed preference theory with axioms,
 - Income and substitution effects: Slutsky's and Hicks' equations, recall backward bending labour supply curve.
4. Producer theory [25 hours]
 - Production function: one-input model, law of diminishing marginal product,
 - Behaviours of total, marginal, and average products.

- Two-input model: isoquants and isocost lines or budget line, producers' equilibrium, expansion path.
- Cost analysis: kinds of total and unit costs, and relationships among unit costs in the short run.
- Long run cost analysis: behaviour of long run average and marginal costs.
- Behaviour of long run average cost (LAC) and the relationship with economies and diseconomies of scale.
- Laws of returns to scale: constant, increasing and decreasing returns to scale.

5. Market Structures [20 hours]

- Characteristics, price and output determination under perfect competition, monopoly, and monopolistic competition in short and long run.
- Efficiency and Welfare comparison.
- Oligopoly: Cournot, Stackelberg, Bertrand, Sweezy's kinked demand curve model. Game theory.

Core texts:

1. Varian, H. R., "Intermediate Microeconomics: A Modern Approach"
2. Mankiw, G. N., "Principles of Microeconomics", Cengage Learning India Pvt Ltd, 7th ed 2015 Company, 8th Edition, 2010

Additional texts:

3. Ahuja, H. L. (2007). *Advanced economic theory: Microeconomic analysis*. S. Chand.
4. Pindyck, R. S. and Rubinfeld D. L., "Microeconomics", Pearson Edu Inc. 8th Ed 2013
5. Koutsoyiannis, A., "Modern Microeconomics", Palgrave Macmillan, 2nd Edition, 2003
6. CORE-Econ (<https://www.core-econ.org/>)

UE2401 - Microeconomics ii: Factor Pricing and Welfare Economics

Modules:

1. Factor Pricing [17 hours]
 - Factor pricing in perfectly competitive markets
 - Marginal productivity theory of input pricing
 - Functional (factor) and personal incomes
 - Factor pricing in imperfectly competitive markets
 - Monopsony power: unionized (collective bargaining) and ununionized workers
 - Bilateral monopoly
 - Theories of wages, rent, interest and profits
2. General Equilibrium [17 hours]
 - Circular flow for the four-sector economy
 - Partial and general equilibrium
 - General equilibrium in production and exchange (Edgeworth box and Pareto optimality in consumption and production)
 - Walrasian general equilibrium analysis
3. Welfare [8 hours]
 - Individual welfare and social welfare
 - Role of value judgements in welfare economics
 - Social welfare functions and criteria
 - Income distribution and equity
 - Arrow's impossibility theorem
 - Theory of second best
4. Market failure [8 hours]
 - Why markets fail; Externalities and efficiency, public goods
 - Asymmetric information
5. Government Intervention [10 hours]
 - Price ceiling, floor
 - Taxes, subsidies
 - Tariffs, production quotas, import quotas, export quotas
 - Competition law; Cartels; Predatory pricing

Core texts:

1. Varian, H. R., "Intermediate Microeconomics: A Modern Approach", W. W. Norton and Company, 8th Edition, 2010

Additional readings:

2. Pindyck, R. S. and Rubinfeld D. L., "Microeconomics", Pearson Ed Inc. 8th Ed, 2013
3. Koutsoyiannis, A., "Modern Microeconomics", Palgrave Macmillan, 2nd Edition, 2003

Macroeconomics

Course Description: These two macroeconomics courses introduce students to the fundamental concept of money in the macroeconomic system (Macroeconomics i), national income accounting, and macroeconomic models and policy (Macroeconomics ii). These courses will set the stage for an appreciation of the kind of fiscal and monetary policy options available to the government to correct economic disequilibria and to stabilize the economy.

UE1402 - Macroeconomics i: Money in the Macroeconomic System

Modules:

1. Introduction [3 hours]
 - Circular flow diagram and networking in the macroeconomic system;
 - Great debate on the role of money – Classical vs Keynesian sides.
 - Role of money in different economic systems.
2. Money [12 hours]
 - Functions of money,
 - Types of money – M1, M2, M3, M4, and M0 as per RBI classification.
 - Creation of credit; Money multiplier.
 - Demand for money: transactionary, precautionary, speculative motives: purchasing power of money.
 - Supply of money and the central bank,
 - Money market equilibrium.
3. Money and Prices [15 hours]
 - Real vs nominal variables;
 - Fisher's transactions approach to the quantity theory of money;
 - Cambridge cash balance approach;
 - QTM as a theory of money income, as a theory of prices
 - An appraisal of QTM
 - Modern QTM and the issue of monetary neutrality.
4. Money, Interest and Income [8 hours]
 - Keynes' Monetary theory,
 - Rate of interest and investment - Liquidity trap;
 - Investment and income.
5. Inflation [7 hours]
 - Concepts, kinds, causes
 - Controls: monetary policy, fiscal policy, physical controls.
 - Fisher's equation: real interest rate, inflation and nominal interest rate.

6. Construction of index numbers [10 hours]
- Meaning;
 - Methods: aggregative and relative methods – Laspeyres', Paasche's, Edgeworth-Marshall, Fisher's ideal formula;
 - Price and quantity index numbers, general index number from group indices;
 - Base shifting;
 - Biases in various types of indices;
 - WPI and CPI computation in India
7. Monetary policy of the Reserve Bank of India [5 hours]
- Targets, instruments, and effectiveness.

Core Texts:

1. Gupta, SB. Monetary Economics: Institutions, Theory and Policy, S Chand, 2018
2. Mankiw, G. N., "Macroeconomics", Worth Publishers, 9th Edition, 2016

Additional Readings:

3. Dornbusch, R., Fischer, S. and Startz, R., "Macroeconomics", McGraw-Hill, 11th Ed 2010
4. Froyen, R.T., "Macroeconomics", Pearson Education, 10th Edition, 2013
5. D'Souza E., "Macroeconomics", Pearson Education, 2009
6. CORE-Econ (<https://www.core-econ.org/>)

UE2402 - Macroeconomics ii: National Income Accounting, Macroeconomic Models and Policy

Modules:

1. Some fundamental concepts in Macroeconomics [15 hours]
 - Microeconomics and Macroeconomics:
 - Macroeconomic goals and policy instruments.
 - Building blocks of macroeconomic analysis:
 - . Aggregate demand curve
 - . Aggregate Supply curve
 - . Special cases of AD, AS
 - . Equilibrium national income and price level
 - . Sources of shifts in AD, AS
 - . Inflation and Unemployment – Philips Curve
 - . Unemployment and national income: Okun's Law.
 - . Circular flow
 - . Two major markets – goods and money.
 - . Interaction between domestic and international markets.
2. National Income Accounting [5 hours]
 - Methods of estimating national income – expenditure method, income received approach, production method, value added or net product method; Difficulties and limitations
 - Real and nominal GDP, GDP deflator
 - Other measures of national income – GNP, NNP, personal income, personal disposable income, per capita income
 - Trends in GDP of India.
3. Classical Macroeconomic Model [10 hours]
 - Two characteristics of the Classical model: focus on real factors; self-adjustment process – Say's law of markets.
 - Labour market behaviour: aggregate labour supply and aggregate labour demand functions, market equilibrium, determination of wage rate and level of employment.
 - Determination of national output based on level of employment and behavior of the production function.
 - Classical dichotomy and monetary neutrality;
 - Classical theory of interest rate
4. Keynesian Macroeconomic Model [10 hours]
 - Economic Depression of the 1930s and the Keynesian Revolution;
 - Simple Keynesian model: components of AD: consumption function, investment function, government spending, exports and imports; AS (zero savings line), equilibrium national output. Macroeconomic multipliers: graphical and algebraic treatment.
 - Role of interest rate in changing AD; liquidity preference, liquidity trap.

5. IS-LM model [8 hours]
- Money and goods market equilibria: deriving IS, LM equations.
 - Fiscal Policy: shifters of IS curve, Government spending effect
 - Monetary Policy: shifters of LM curve, money supply effect
 - Simultaneous money and goods market equilibrium, accommodative monetary and fiscal policies
 - Crowding out and crowding in
6. Open Economy Macroeconomics [7 hours]
- Balance of Payments, Exchange Rate, equilibrium and disequilibrium of BoP.
 - Short-run Open Economy: Mundell-Fleming Model.
 - Purchasing Power Parity.
7. Other models and modern debates [5 hours]
- Supply side economics
 - Life-cycle-permanent-income-hypothesis and the random walk model
 - Relative effectiveness of fiscal and monetary policies: policy lag, automatic stabilisers
 - Monetary policy: rules vs discretion
 - Balanced budget debate

Core texts:

1. Froyen, R.T., "Macroeconomics", Pearson Education, 10th Edition, 2013
2. Dornbusch, R., Fischer, S. and Startz, R., "Macroeconomics", McGraw-Hill, 11th Ed 2010

Readings:

3. Mankiw, G. N., "Macroeconomics", Worth Publishers, 9th Edition, 2016
4. D'Souza E., "Macroeconomics", Pearson Education, 2009
5. CORE-Econ (<https://www.core-econ.org/>)

UE3401 - Growth and Development Economics

Course Description: Since its birth nearly a century ago, Development Economics has become increasingly important in a world where poverty and inequality continue to pose major human rights issues. This course will bring to the fore these issues, which may have been only touched upon in the traditional micro and macroeconomics courses.

Modules:

1. Role of social factors in economic growth and development [5 hours]
Perspectives from Smith, Lewis, Sen, Parthasarathi.
2. Demography [5 hours]
 - Concepts, birth and death rates, age structure, fertility and mortality
 - Demographic transitions, demographic dividend, declining sex ratio
 - Linkages between income, mortality, fertility choice, human capital accumulation
 - Migration
3. Growth Models [10 hours]
 - National Savings Rate and Growth (Harrod-Domar model)
 - Technological progress and Growth (Solow-Swan model)
 - Rostow's Stages of Growth
 - Endogenous growth models (Romer's and others)
4. Varied Concepts of Development [7 hours]
 - Growth and development
 - Sen's capabilities approach
 - GDP, PQLI, sustainable development, HDI, GDI
 - social development, inclusive growth
 - happiness index
 - comparing development trajectories
5. Development Models [18 hours]
 - Role of government in addressing development issues
 - Dual-sector model (Lewis)
 - Labour Theory of Value and Historical Materialism (Marx)
 - Big Push Theory (Rosenstein-Rodan)
 - Balanced Growth model (Nurkse)
 - Unbalanced Growth model (Hirschman)
 - Theory of Critical Minimum Effort (Leibenstein)
 - Rural-urban migration and expectations model (Harris-Todaro)
 - Relation between growth and income distribution (Kuznet's hypothesis)
 - Village development model (Gandhian perspective)
 - socio-economic inequality (Ambedkar's perspective)

6. Poverty and Inequality [15 hours]
- Concepts of poverty
 - Measurement
 - Mechanisms that generate poverty traps
 - Path dependence
 - Meaning of inequality, axioms, measurement
 - Linkages between inequality and development
 - Status of poverty and inequality in the world

Core texts:

1. Ray, D., "Development Economics", Princeton University Press, 2009.
2. Todaro M. P. and Stephen, C., Smith, "Economic Development", Pearson, 12 Ed., 2014.
3. Yotopoulos, P A, and Nugent, "Economics of Development: Empirical Considerations"

Additional readings:

4. Dasgupta, P., "Economics, A Very Short Introduction", Oxford University Press, 2007
5. Sen, A., "Development as Freedom", Oxford University Press, 1999
6. Thirlwall A. P., "Growth and Development", Palgrave Macmillan; 8th Edition, 2005
7. Chenery, Hollis and T. N. Srinivasan, "Handbook of Development Economics, Elsevier, 1998.
8. Myint, H. "The economics of the developing countries". Hutchinson Univ. Library, 1973
9. Lewis, Arthur, Theory of Economic Growth

UE3302 - Indian Financial System

Course Description: The course focuses on the importance of various financial institutions in India's economy. It exposes students to the working of these institutions, changes in their relative importance over time, role of regulations in financial intermediation, and the problems affecting the financial sector while focusing on their relevance to the transmission of monetary policy.

Modules:

1. Introduction [10 hours]
 - Role of the Central Bank, reserve money and money supply, direct and indirect finance, financial intermediation
 - Components of a formal financial system: functions
 - Elements of well-functioning system
 - Nature and Role of Financial Institutions and Financial Markets
 - Reforms in Financial System in India: Constituents of Indian Financial system, Financial Institutions, Financial Markets, Financial Services, Financial Instruments
 - Changing nature of the global financial system: growth of shadow banking
 - Emergence of fin-tech and challenges
 - Foreign ownership restrictions: FII/ FDI policy
 - The government-financial sector nexus: too-big-to-fail, recapitalization, government borrowings
2. Money and Capital Markets [7 hours]
 - Money markets instruments: primary and secondary markets, depositories and custodians
 - Debt markets
 - New financial instruments, derivative market
 - Role of equity markets
 - Role of venture capital and private equity
 - Trends in capital mobilization.
3. Financial Institutions and Financial Products [12 hours]
 - Development financial institutions
 - Banking and non-banking institutions – objectives, structure, functions, role and specific policies of RBI, NABARD, IDBI, FFCI, FDBI, ICICI, SIDBI, SFC's, NSDL, CSDL
 - Mutual funds
 - Insurance
 - Micro-finance
 - Payments banks
 - Small finance banks
 - Rating agencies

4. Financial Regulations [8 hours]
- Central Bank-bank regulations
 - Non-banking regulations-SEBI, FEMA, IRAI-
 - Market regulation
 - Forex market
 - Transmission mechanism
 - Interest rate: nominal and real interest rate
 - Indian State
 - Shadow banking
 - Role of money lender-Financial Inclusion
 - Role of capital in financial intermediation
 - Basel rules and their implementation in India
5. Issues in India's Financial system [3 hours]
- High levels of NPA- historical and current
 - Recovery and asset reconstruction ecosystem
 - Insolvency and Bankruptcy Code, 2016
 - Under-penetration of credit in SME sector
 - Role of frauds
 - Consumer protection: mis-selling of MFs/ insurance policies
6. Monetary Policy Transmission in India [5 hours]
- Target, instruments, performance, trade-offs, changing nature of the financial system and challenges for the Central Bank.

Core Texts:

1. Pathak, B. V., "The Indian Financial System: Markets, Institutions and Services", Pearson Education, 2nd Edition, 2010.
2. Bhole, L. M. and Mahukud, J., "Financial Institutions and Markets", Tata McGraw-Hill, 5th Edition, 2011.
3. Khan, M. Y., "Indian Financial System", Tata McGraw-Hill, 7th Edition, 2011.

Additional Readings:

4. RBI publications: Monthly Bulletin, Financial Stability Report, Report on Trends and Progress of Banking in India, Weekly Statistical Supplement
5. Annual Reports of RBI, NABARD, SIDBI, SBI and HDFC Life Insurance Company
6. Factsheets of debt & equity schemes of Franklin Templeton Asset Management Company

UE4401 - Financial Economics

Course Description: This course discusses the economics of financial markets. The ubiquitous nature of financial institutions and instruments makes this an important course. An understanding of the domestic and world economy may be incomplete without understanding them. Students are introduced to the fundamental concepts in accounting, time value of money, risk-return trade-off. In addition, this course also deals with various asset pricing models, options and derivative pricing and valuation of securities.

Modules:

1. Basic Accounting [10 hours]
 - Recording transactions
 - Types of accounts
 - Rules of accounting
 - Journals; ledger accounts
 - Trial balance for rectification of errors, profit and loss account and balance sheet preparation, cash flow statement,
 - Ratio analysis
 - Practices in India
2. Introduction to Financial Economics [10 hours]
 - Components of formal financial system
 - Functions, Key elements of well-functioning system
 - Nature and role of financial institutions and financial markets, primary and secondary markets, depositories and custodians
 - Debt markets & equity markets
 - Time Value of Money, Present and Future Values
3. Cash-Flow Streams [7 hours]
 - Basic theory of interest
 - Fixed income securities, term structure of interest rates, yield curves, spot and forward rates, internal rate of return, payback period
4. Risk and Returns [6 hours]
 - Expected utility; Von Neumann-Morgenstern, Decision making under uncertainty
 - Types of risk and sources; attitude towards risk, measures of risk-absolute and relative risk aversions; risk aversion and risk neutrality, Arrow-Pratt measures, risk compensation
 - Risk- return trade off; Measuring portfolio return and risks, portfolio mean and variance, the Markowitz model, optimal portfolio choice
 - Market Efficiency

5. Asset Pricing Models [10 hours]
 - Models of Asset Returns
 - Systematic and specific risk
 - Capital market line
 - Capital asset pricing model (CAPM)
 - Beta of an asset and portfolio
 - Security market line
 - Arbitrage Pricing Theory (APT)
 - Pricing formula

6. Options and Derivatives [10 hours]
 - Forward and futures contracts and prices;
 - Options markets, stock index futures, interest rate futures, hedging, call and put options, put-call parity
 - Trading strategies, -Binomial approach; Black-Scholes formula
 - Regulation in India

7. Valuation of Stocks [7 hours]
 - Dividend discount model
 - Free cash flow model
 - Bond valuation, different types of interest rate, call money rates, treasuring, bells rate, repo
 - Rating agencies, volatility

Core Texts:

1. Bailey, R. E., "The Economics and Financial Markets", Cambridge University Press, 2005
2. Le Roy, S. F., and Werner, J. Principles of Financial Economics, CUP, 2000
3. Elton, E.J and M.J. Gruber, Modern Portfolio Theory & Investment Analysis, (fourth edition) John Wiley & Sons 1991.
4. Hull, J. C., "Options, Futures and Other Derivatives", Pearson Education, 2005.
5. Copeland, T. E. and J. F. Weston, Financial Theory and Corporate Policy, Addison Wesley

Additional Readings:

6. Sharpe, W., Alexander, G. J. and Bailey, J., "Investments", Prentice Hall of India, 1998.
7. Damodaran, A., "Investment Valuation: Tools and Techniques for Determining the Value of Any Asset", John Wiley & Sons 3rd Edition, 2012
8. Stephen A. Ross, Randolph W. Westerfield and Bradford D. Jordan, Fundamentals of Corporate Finance. McGraw-Hill, 7th edition, 2005.
9. Mishkin, F. S., Eakins, S.G., Jayakumar, T. and Pattnaik, R.K., "Financial Markets and Institutions" Pearson, 8th Ed, 2017
10. Bhole, L. M. and Mahukud, J., "Financial Institutions and Markets", TMGH, 5th Ed, 2011.
11. Khan, M. Y., "Indian Financial System", Tata McGraw-Hill, 7th Edition, 2011.
12. Pathak, "The Indian Financial System: Markets, Institutions and Services", Pearson 2010.
13. Brealey, R. and S. Myers, Principles of Corporate Finance, fifth edition, New York, MGH

UE4402 - Behavioural Economics

Course Description: To equip students with fundamentals of behavioural economics and also expose them to practical applications. The course will enhance the understanding regarding the behavioural traits and explanation of complex economic phenomenon.

Modules:

1. Foundations of Behavioural Economics (15 Hours)
 - Nature of Behavioural Economics
 - Behavioural Economics: Past, Present and Future
 - Rationality Assumptions and Behaviour
 - Methodological Approach – Origins of Behavioural Economics – Neo-Classical and Behavioral Approaches to Studying Economics
 - Perspective on Psychology and Economics
 - Kahneman and Behaviouralism
2. Preferences, Choices and Decision Making (18 Hours)
 - Values, Preferences and Choices
 - Choice Under Uncertainty – The Standard Model
 - Axioms, Assumptions and Definitions
 - The Neuro-Scientific Basis of Utility
 - Decision Making Under Risk and Uncertainty: Prospect Theory
 - Reference Points
 - Risk Concept and Understanding – Loss Aversion – Shape of Utility Function – Decision Weighting – Probabilistic Judgment.
3. Beliefs, Heuristics and Biases (20 Hours)
 - The Standard Model: Probability Estimation
 - Self-Evaluation Bias – Projection Bias - Causes of Irrationality
 - Behavioural Law and Economics – Selection Among Multiple Strict Equilibria Via Structure, Framing, Fairness, Complexity
 - Revealed Preference
 - Belief
 - Game Theory
 - Nature and Components of Mental Accounting – Framing and Editing – Budgeting and Fungibility – Choice Bracketing and Dynamics – Time Discounting.

Core Texts:

1. Morris, A, "Contemporary Behavioral Economics: Foundations and Developments", M E Sharpe, 2006.
2. Erik, A, "A Course in Behavioural Economics", Palgrave Macmillan, 2012.
3. Peter, D & Variainen, "Behavioural Economics and its applications", PUP 2007
4. David, J. R., "Introduction to Behavioral Economics", Wiley, 2014.
5. Wilkinson N and Hales M, "An Introduction to Behavioural Economics", Palgrave

UE4403 - Social and Economic Thoughts of Dr B R Ambedkar

Course Description: This course is designed to provide an overview of the social and economic thoughts of Dr Ambedkar. In addition to his contribution in drafting the Indian Constitution, he worked on a wider canvas, consisting of social and economic emancipation of deprived groups, including women.

Modules:

- 1. Introduction**
 - Dr Ambedkar's vision of economy and society [5 hours]
- 2. Monetary and Fiscal Economics** [15 hours]
 - Critique of British India's monetary standard, silver standard and its instability, gold standard
 - Problems of managing internal and external value of the rupee, currency reform plan
 - Dr Ambedkar's methodology for studying sources of revenue in British India
 - Dr Ambedkar's fiscal economics and its impact; financial inclusion
- 3. Agricultural reforms** [10 hours]
 - Analysis of consolidation of land holdings, redefinition
 - Ricardian view vs Dr Ambedkar's view
 - collective farming and social and economic equity
 - Debate on nationalization of land vs ceiling on land ownership
- 4. Industrialisation and labour welfare** [10 hours]
 - Social theory of labour exploitation; industrialization
 - Labour laws and social security
 - Debate on cottage and small industries in rural areas vs large scale industries in urban areas
- 5. Social and economic equity** [10 hours]
 - Provisions in Constitution
 - Hindu code bill
- 6. Water and Power Resource Development** [10 hours]
 - Role of Dr Ambedkar in planning for water and power resource development
 - Multi-purpose irrigation projects and establishment of technical organisations for water and power resource development and utilization
 - Indian Constitution and inter-state river disputes

Core Texts:

1. Economic Thoughts of Dr B R Ambedkar, by O D Heggade
2. Speeches and Writings of Dr B R Ambedkar, compiled by W R Mujawar (4 volumes)

Additional Readings:

3. Encyclopaedia of Dr Bhim Rao Ambedkar, by D'Souza and Vyas (3 volumes)
4. Economic Thought and Policy of Dr Ambedkar, by Nagar and Nagar
5. Socio-Economic and Political Vision of Dr B R Ambedkar, by Nutan Singh
6. Socio-Economic Thoughts of B R Ambedkar, by Deo Prakash
7. Ambedkar's Role in Economic Planning, Water and Power Policy, by Thorat

UE4304 - Indian Economy

Course Description: Using appropriate analytical framework, this course reviews major trends in economic indicators and policy debates in India during post-Independence period, with particular emphasis on paradigm shift and turning points.

Modules:

1. Indian Economy Since Independence (15 Hours)
 - Major features of the economy post-independence
 - Growth and Development under Different Policy Regimes
 - Goals, Constraints and Policy Frameworks- an Assessment of Performance of the economy
 - Regional Disparities
 - Sustainable Development
2. Population and Human Development (12 Hours)
 - Demographic transition in India and the demographic dividend
 - Trends and Issues since 1951
 - Education Policy
 - Health and Malnutrition.
 - Human Development Index
3. Challenges of the Economy (10 Hours)
 - Poverty
 - Unemployment,
 - Economic Inequality and Distributive Justice.
 - Various Policies and Programs of the Govt since 1991
4. Sectoral Development (15 Hours)
 - Growth
 - Problems and issues of Agriculture, Industry and Service Sectors of the economy
 - Policies towards each sector
5. Planning Experiences (8 Hours)
 - Planning Commission and Five Years Plans- an overview
 - NITI Ayoga- Structure and Functions
 - Differences between Planning Commission and NITI Ayoga

Core Texts:

1. Datt, G. and Mahajan, A., "Datt and Sundharam's Indian Economy", Sultan Chand Publishing, 72nd Edition, 2016.
2. Kapila, U. (Ed.), "Indian Economy Since Independence", Academic Foundation, 2009
3. Puri, V.K and Mishra S.K., "Indian Economy", Himalaya Publishing House, 2014.

UE5401 - International Economics

Course Description: This course discusses economic theories that may be applied to International Trade. The course also addresses that current trends, composition and determinants of trade, policies and international institutions.

Modules:

1. Introduction [10 hours]
 - What is International Economics
 - Characteristics of World Trade
 - Important Institutions in Global Trading System, History of GATT, WTO
 - Trade and Economic Development
 - International Monetary Economics
2. Theories [20 hours]
 - Mercantilist view on trade
 - Pure International Trade Theories (Smith, Ricardo, Mills)
 - Factor Endowments and Heckscher-Ohlin Theory
 - New Trade Theory: Economies of Scale, Imperfect Competition, Strategic Trade Theories and Intra-Industry Trade
 - New Economic Geography
 - Emerging issues in international trade: Firms in global economy, multinationals, global value chain and international production networks, outsourcing, services trade, digital trade – e-commerce
3. Trade Policy [15 hours]
 - Instruments of trade policy: tariff and non-tariff barriers, new protectionism
 - Political economy of trade policy; Controversies, Import substitution and export promotion
 - Economics integration: multilateralism, customs union and free trade areas
4. International Monetary Economics [15 hours]
 - BoP: Meaning, Structure, Components and Adjustment Mechanisms
 - Fixed versus Flexible Exchange Rates: Meaning, Type and Determination
 - Purchasing Power Parity
 - International Monetary System and Institutions
 - Financial globalisation
 - Financial Crisis

Core Text:

1. Carbaugh, R.J., International Economics, South-western sengage learning, 17 th edition
2. Salvatore, D., "International Economics", John Wiley, 12th Edition, 2015.

Additional Readings:

3. Krugman, P., Obstfeld, M. and Melitz, M., "International Economics: Theory and Policy", Pearson Education Indian Edition, 9th Edition, 2012.
4. Caves, R. E., Frankel, J. A. and Jones, R. W., "World Trade and Payments: An Introduction", Pearson, 10th Edition, 2007.
5. Kindleberger, C.P., "International Economics, R.D. Irwin Homewood, 1976.
6. Appleyard. D. R., Field. A. J., International Economics, McGraw Hill, 8th edition
7. Sodersten, B, Reed, G., International Economics, Palgrave McMillan, 3rd edition
8. Pilbeam, K., International Finance, Palgrave McMillan, 4th edition

UE6401: Public Economics

Course Description: Public Finance is the course of Government policy from the viewpoint of equity, efficiency and the role of the state.

Modules:

1. Public Finance [15 hours]
 - Meaning, nature, scope, importance of public finance,
 - Private finance;
 - Principal of maximum social advantage,
 - Market failure, private goods, public goods, merit goods, free riding, externalities, Coase theorem
2. Public Revenue [20 hours]
 - Sources of revenue, tax and non-tax,
 - Cannons of taxation,
 - Types of direct and indirect taxes, progressive, proportional, regressive, single, multiple, taxable capacity, incidence, impact, evasion;
 - Structure and trends of tax revenue in India
3. Public Expenditure and Public Debt [20 hours]
 - Principles of public expenditure,
 - Classification, effects, theories, Wagner's law, Peacock-Wiseman, Colin-Clarks critical limit theory, determinants;
 - Public debt, meaning, types, sources of internal and external public debt, effects, methods of repayment;
 - Trends in India, FRBM Act
4. Fiscal Policy [5 hours]
 - Meaning, fiscal policy for Development, Allocation, Distribution and Stabilization
 - Functions of Fiscal Policy,
 - Budget: Concepts, Instruments and Objectives of Budgets,
 - Different Concepts of deficit

Core Texts:

1. Tyagi, B.P., "Public Finance", Jai Prakash Nath Co., 1992.
2. Bhatia H.L., "Public Finance", Vikas Publishing House Pvt.Ltd., 1984.
3. Dalton, H., "Principles of Public Finance", Routledge, 1st Edition, 2009.
4. Musgrave, R. and Musgrave, P., "Public Finance in Theory and Practice", McGraw- Hill International Edition, 1989.

Additional Readings

5. Rosen, H. S. and Gayer, T., "Public Finance", McGraw-Hill/Irwin, 9th Edition, 2009.
6. Cullis, J & Jones P, "Public Finance and Public Choice", OUP, 1st edition, 1998.

7. Rosen, H. S., "Public Finance", McGraw Hill Publications, 7th edition, 2005.
8. Herber, B. P., "Modern Public Finance", R. D. Irwin, 1979.
9. Jha, R., "Modern Public Economics", Routledge, 1998.
10. Sury, M. M., "Government Budgeting in India", Indian Tax Institute, 1990.
11. Chelliah, R.J., "Towards Sustainable Growth: Essays in Fiscal and Financial Sector Reforms in India", Oxford University Press, 1996.
12. Srivastava, D. K., "Issues in Indian Public Finance", New Century Publications, 2005.

UE6202 - Economic History

Course Description: This core subject provides the much-needed historical context to all of the economic theories and phenomena that the students study through their educational career. This historical perspective of modern events and observations gives key insights without which we run the risk of repeating old mistakes.

Modules:

1. Pull of pre prehistory [6 hours]
 - Explaining world inequality with pre-historical events;
 - The Malthusian Trap and the modern escape from it.
2. Industrialisation [6 hours]
 - The British industrial revolution;
 - Third world industrialization;
 - Global dynamics of industrialization;
 - Explanations for the Great Depression.
3. A History of Money [6 hours]
 - The Bullion system, the gold standard,
 - Manias and panics.
4. Non-economic explanations for economic phenomena [6 hours]
 - Institutions and culture
5. Indian Economic History pre-1947 [6 hours]
 - Pre-colonial economy, colonial economy,
 - Nationalist vs imperialist accounts

Core texts:

1. Diamond, J. M. (1998). *Guns, germs, and steel: A short history of everybody for the last 13,000 years*. Random House.
2. Clark, G. (2008). *A farewell to alms: a brief economic history of the world*. PUP.
3. Huberman, L. (1968). *Man's Worldly Goods* (Vol. 70). NYU Press.
4. Hobsbawm, E. J. (1975). *Age of Capital: 1848-1875*. Abacus.
5. Roy, Tirthankar, *Economic History of India – 1857-1947*, OUP

UE5203 – Ethics and Economics

Course Description: This course aims to expose students to how economy and society are to be organized on certain ethical principles if human happiness is to be ensured. There should be an understanding that society is larger than economy, and ecology is larger than society.

Modules:

1. Ethics in economic behaviour [10 hours]
 - Ethics in economics, problems of contemporary society,
 - Fundamental issues of freedom, equality and justice;
 - Rationality, beliefs, desires, decisions, bounded rationality, neo-classical rationality
 - Critique of welfare economics, altruism; taxation;
 - Professionals and ethics
2. Approaches to Ethics [10 hours]
 - Alternative theories, virtue ethics, utilitarianism, Pareteanism, libertarianism, Kantian ethics, contractarianism, Marxism,
 - Rights approach, happiness, fulfillment, participation
3. Applied Ethics [10 hours]
 - Society, politics, environment, cost-benefit analyses, business ethics,
 - Gender,
 - Science and technology

Core Texts:

1. Sen, A. K., "Ethics and Economics", Oxford University Press, 5th Edition, 2001.
2. Buchanan, A., "Ethics Efficiency and the Market", Rowman and Littlefield, 1988.
3. Hamlin, A. P., "Ethics, Economics and Sate", St. Martins, 1986.
4. Pandit, V. N., "Ethics, Economics and Social Institutions", Springer, 2016.

Additional Readings

5. Nadkarni, M. V., "Ethics for Our Times", OUP, 2nd Ed (Chapters 1, 3, 4 and 10), 2014.
6. Diwan, R. and Lutz, M., "Essays in Gandhian Economics", Gandhi Peace Foundation.
7. Easterlin RA, "Income & Happiness: Towards a Unified Theory", Economic J., 465-84, 2001.
8. Rao, V. K. R. V., "The Gandhian Alternative to Western Socialism", BVB, 1970.
9. Brenkert GG & Beauchamp TL, (Ed.), "The Oxford Handbook of Business Ethics", OUP, 2010.
10. Hausman D. M. and McPherson, M. S., "Economic Analysis and Moral Philosophy", CUP, 1996.
11. Ackerman SR, "Corruption & Government: Causes, Consequences and Reforms", CUP, 1999.
12. Nadkarni, M. V., "Integrating Ethics into Economics", Centre for Multidisciplinary Development Research (CMDR), Dharwad -3rd Founder's Day Lecture, 2013.

Quantitative Techniques

Mathematical Economics

Course Description: This course will introduce students to mathematical techniques that are used in Economics. The mathematical approach has the advantages of precision and clarity in understanding complex economic phenomena.

UQ1401 - Mathematical Economics i: Algebra and Geometry

Modules:

1. Preliminaries [22 hours]
 - Nature and scope of mathematical economics.
 - Sets: Set Types (Finite, Infinite, Countable, Uncountable, Null, Singleton Set), Operations, Venn Diagram, Non-denumerable sets, De Morgan's Law, Product Set – Relations: Reflexive, Symmetric, Transitive, Equivalence, functions, point sets
 - Some applications: Symbols, Sets, the real Number System, Logic & Reasoning. Problems of union, intersection, Cartesian product & relationships of sets
2. Single Variable Functions [23 hours]
 - Single Variable Functions: Injective, Surjective and Bijective Functions,
 - Linear, Quadratic, Polynomial, Logarithmic and Exponential – Graphing Functions –
 - Applications of Logarithmic and Exponential Functions – Sequence and Series – convergence and tests of convergence.
 - Some applications in economics: Demand, supply, equilibrium, production functions, Law of diminishing marginal returns, cost functions, Engle's Law, and so on; Laffer Curve, consumption function, investment function, equilibrium national income, growth economics
3. Matrices [15 hours]
 - Matrix Operations: Addition, Multiplication, Scalar Product, Lines and Planes- Matrix Multiplication –The Transpose- Determinants – Rank of a Matrix: Echelon and Reduced Echelon Form – Matrix Inverse – Cramer's Rule
 - Some Applications in Economic: Input-Output relationships, systems of equations and growth economics

Core texts:

1. Chiang, A. C. and Wainwright, K., "Fundamental Methods of Mathematical Economics", McGraw-Hill/Irwin, 4th Edition, 2005.
2. Sydsaeter, K and Hammond, P., *Mathematics for Economic Analysis*, Pearson Educational Asia, 4th Edition, 2002.

Additional texts:

3. Dowling, E. T., "Introduction to Mathematical Economics", McGraw-Hill, 2001.
4. Hoy, M., Livernois, J. McKenna, C., Rees, R. and Stengos, T., "Mathematics for Economics", MIT Press, 3rd Edition, 2011

UQ2401 - Mathematical Economics ii: Calculus

Modules:

1. Single Variable Calculus [25 hours]
 - Limits – Converging, Diverging and Oscillating Sequences – Continuity – Derivative and Differentials – First, Second and Higher Order Derivative – L'Hospitals' Rule –
 - Interpretation of First and Second Order Derivatives – Optimization
 - Some application in economics: Slope and derivative, production, consumption, costs – optimization, derive marginal cost and marginal product functions from the total cost and total product functions
2. Multivariate Calculus [20 hours]
 - Two variable Optimization, Maxima & Minima
 - The Extreme Value theorem
 - Partial Derivatives and Total Derivatives – Second Order and Mixed Partial derivatives
 - Concave and Convex functions
 - Unconstrained Optimization
 - Constrained Optimization and the Lagrange Multiplier (First Order Conditions only)
 - Some Applications in Economic: two goods consumption decision, two inputs production decision. problem of a multi-product firm, price discrimination, income-investment-expenditure issues, Production Smoothing. linear & non-linear models elasticities, partial elasticities, Constrained optimization problems are solved with relevance & interpretation.
3. Integration [15 hours]
 - Indefinite Integrals and Definite Integrals-Integration by Parts
 - Some Applications in Economic: Producer and Consumer surplus; Lorenz curve

Core text:

1. Chiang, A. C. and Wainwright, K., "Fundamental Methods of Mathematical Economics", McGraw-Hill/Irwin, 4th Edition, 2005.
2. Sydsaeter, K and Hammond, P., *Mathematics for Economic Analysis*, Pearson Educational Asia, 4th Edition, 2002.

Additional texts:

3. Dowling, E. T., "Introduction to Mathematical Economics", McGraw-Hill, 3rd Ed, 2001
4. Hoy, M., Livernois, J. McKenna, C., Rees, R. and Stengos, T., "Mathematics for Economics", MIT Press, 3rd Edition, 2011
5. American Economic Association publications on economics of growth

Statistics for Economics

Course Description: The course familiarises students in the statistical techniques employed in not just economics, but increasingly, all social and pure scientific research. The techniques discussed in these courses will help students analyze data in economics and will also build a foundation for Econometrics. Assignments will be based on the economic applications.

UQ2402 - Statistics for Economics i: Probability, Sampling, and Descriptive Statistics

Modules

1. Introduction [covered under Computer Laboratory, but revised again] [10 hours]
 - What is Statistics – Scope of statistics in economics
 - Categories of Data – Primary and Secondary Data,
 - Types of Data - Point of time data, Time Series Data, Cross Section Data, Panel Data and Big Data – types of measurement: Nominal, ordinal, ratio and interval
 - Classification and Tabulation - construction of frequency distribution,
 - Graphical representation - leaf and stem diagram, Bar diagram, Pie chart, histogram, frequency curve and cumulative frequency curve (Ogives)
 - The use and interpretation of charts, charts in journalism
2. Descriptive Statistics [15 hours]
 - Measures of Central Tendency and Dispersion, ie., mean, median, mode, harmonic mean, geometric mean, percentiles, quartiles
 - Measures of Variability: Range, Standard deviation, variance, co-variance
 - Measures of Skewness and Kurtosis Pearson, Bowley,
 - Moments, coefficient of variation
 - Bivariate Frequency Table and Correlation, Cross Tabulation of data and interpretation, Concurrent Deviation, Coefficient of Deviation.
 - Computation and interpretation of Two-way Relationships, limitations
3. Probability
 - a. Elements of Probability [15 hours]
 - Permutation and combination,
 - Random Experiment, Sample Space, Events,
 - Probability - Axiomatic definition, finite sample space
 - Generalized addition theorems, Independence of two events
 - Conditional probability, Bayes' Theorem.
 - Operation of chance, learning from economic history
 - b. Random Variables and Probability Distributions [15 hours]
 - Discrete & Continuous Random Variables
 - Probability Mass & Density functions, Distribution Functions,
 - Mathematical Expectations, Theorems,
 - Binomial, Poisson, Normal, Uniform, Exponential & Lognormal distributions.

- Uncertainty in economic situations; patterns and forming expectations
4. Index Numbers [5 hours]
- Definition and types
 - Price index, quantity index, value index, simple and weighted index number, construction of Index numbers
 - Methods: aggregative and relative methods – Laspeyres', Paasche's, Edgeworth-Marshall, Fisher's ideal formula

Core Texts:

1. Anderson, D. R., D. J. Sweeney and T. A. Williams, "Statistics for Business and Economics", Cengage Learning India Pvt. Ltd., 11th Edition, 2011.
2. Daniel and Terrel: Business Statistics for Management and Economics; Hoaghton Mifflin Co., Boston, Toronts, 7th Edition, 1995, PP 1 to 972 + 6 Appendices.

Additional Texts:

3. Gerald Keller statistics for management and economics 11th edition, Cengage publication, 2017
4. Teresa Bradley, Essential Statistics for Economics, Business and Management, John Willey Publisher, 2007
5. Medhi, J., Statistical Methods: An Introductory Text, Wiley, 1992
6. Freedman, Purves, and Pisani, Statistics 2011
7. Morris H. Degroot and Mark J. Schervish, "Probability and Statistics", 4th edition, 2012.

UQ3401 - Statistics for Economics ii: Hypothesis Testing and Multivariate Analysis

Modules:

1. Methods of Sampling [10 hours]
 - Probability & Non- Probability sampling methods
 - Simple random sampling with and without replacement, use of random number tables, Stratification, uni-way, multiway; Cluster sampling, stage sampling, Systematic sampling-linear and circular; Phase sampling and Inverse sampling
 - Convenience sampling, Judgment sampling; Delphi sampling, Snowball sampling; Purposive sampling
 - Randomness, use and utility of various sampling methods
2. Sampling and Estimation [15 hours]
 - Populations and Sample; Parameter and Statistic
 - Principles of Sampling, Random number tables
 - Estimation Theory: Point Estimators, Sampling Distribution of a Statistic: Z, T, Chi Square, F Tests, – Interval Estimation
 - Drawing inferences from a sample; standard error
 - Robustness of statistical tests
3. Hypothesis Testing [20 hours]
 - Principle of Hypothesis Testing: Type I, II errors; Level of Significant, Simple, composite and joint hypotheses, Null and Alternative hypothesis
 - Development of hypotheses, formulation, specification, use of and choice of tools
 - Testing means, proportions, variance – small and large samples, p value, power or a test
 - Test for Goodness of Fit - T, Chi-Square and F Distributions
 - Analysis of Variance- ANOVA & MANOVA
4. Correlation and Regression [15 hours]
 - Correlation, Correlation coefficient, Karl Pearson's Correlation Coefficient, Spearman's Rank Correlation,
 - Regression, Regression versus Correlation; Simple linear regression,
 - Method of ordinary least square, derivation of slope and intercept; testing for significance
 - Multiple regression
 - Distributed lag models, Koyck and Almon's weighting schemes;

Core texts:

1. Lee, Lee & Lee: Statistics for Business & Economics: World Scientific, Singapore, Second Edition, 2000, pp1 to 976+Appendices.
2. Anderson, D. R., D. J. Sweeney and T. A. Williams, "Statistics for Business and Economics", Cengage Learning India Pvt. Ltd., 11th Edition, 2011.

Additional Texts:

3. Gerald Keller statistics for management and economics 11th edition 2017, Cengage publication
4. Teresa Bradley, Essential Statistics for Economics, Business and Management, 2007 John Willey Publisher
5. Medhi, J, Statistical Methods: An Introductory Text, 1992, Wiley.
6. Daniel & Terrell: Business Statistics For Management & Economics: Houghton & Middlin Co.,1995, Seventh Edition, pp1 to 972 + Appendices.

Econometrics

Course Description: This is the next step in the quantitative research skills taught to the students. To begin with, the students will be able to carry out ordinary least square regressions as well as multiple regressions, which are at the very foundation of quantitative economic analysis. Additionally, more complex cases where the standard assumptions of the classic linear regression may not hold are also dealt with. The advanced paper in econometrics aims at familiarizing students with time series analysis, panel data analysis and discrete choice models, which are widely applied in empirical research and data analytics.

UQ4401 - Econometrics i: Correlation and Regression Models

Modules:

1. Nature and Scope of Econometrics [5 hours]
 - Meaning of econometrics, relationship with economics, mathematics and statistics
 - Difference between economic and econometric models
 - Methodology of econometrics
 - Deterministic and stochastic specifications
 - Types of data
 - Correlation & Regression
 - Linear regression with a single regressor
 - Linear and non-linear functions
2. Simple Linear Regression Model [15 hours]
 - Basic functional forms of regression model
 - Classical Linear Regression Model- Ordinary Least Square Method (OLS)- assumptions, estimation & properties
 - Gauss-Markov Theorem (BLUE properties)
 - Statistical inference, prediction, R^2 and standard errors of the OLS
 - Regression through origin
 - Scaling and units of measurement
3. Multivariate Regression Model [10 hours]
 - Fitting a multiple regression by the method of Ordinary Least Squares (OLS)
 - Reduced form equations
 - Assumptions
 - Estimation
 - Properties of OLS, R^2 , Adjusted R^2
 - Step wise regression- backward and forward selection of independent variables
 - Dummy Variable Regression Model; construction and interpretation.
4. Other Multivariate Techniques
 - Discriminant analysis
 - Principle component analysis

- Exploratory factor analysis
- Conjoint analysis
- Cluster analysis

5. Violation of classical linear regression assumptions [10 hours]
- Multicollinearity
 - Heteroskedasticity
 - Autocorrelation
 - Residual analysis

Practical work [20 hours]

Exposure to statistical packages, R/Python/E-Views/STATA, exercise will be provided in each week to demonstrate the models and their interpretation

Core reference:

1. Koutsoyiannis, A, Theory of Econometrics
2. Wooldridge, J. M., "Introductory Econometrics: An Introductory Approach", South-Western, Cengage Learning, 5th Ed, 2013
3. Gujarati, D. N., Porter D.C., Gunasekar S., "Basic Econometrics", Mc Graw Hill, 5th Ed, 2012

Additional Texts:

4. Studenmund A. H., "Using Econometrics: A practical Guide", Pearson Education, 7th Ed, 2017
5. Stock, J. H. and Watson, M. W., "Introduction to Econometrics", Pearson, 3rd Ed, 2015.
6. Brooks, C., "Introductory Econometrics for Finance", Cambridge University press, 4th Ed, 2019
7. Baum, C. E., "An Introduction to Modern Econometrics Using Stata", Stata Press, 2006.
8. Gujarati, D. N., "Econometrics by Example", Red Globe Press, 2nd Ed, 2014

UQ5401 - Econometrics ii: Advanced Econometrics Models

Modules:

1. Simultaneous Equation Model [10 hours]
 - Meaning and nature
 - Simultaneous equation bias, identification problem
 - Endogeneity
 - Instrumental variables
 - Application of ILS, 2SLS and 3SLS
2. Introduction to Time Series Analysis [15 hours]
 - Basic concepts of time series model: Deterministic and Stochastic processes, Stationary Process, Non-stationary process
 - Random walk model, Purely Random Process, random walk with drift, Random walk with drift and trend, Integrated Variables
 - Deterministic and stochastic trends
 - Concept of Unit root, Dickey fuller test and Augmented Dickey fuller test; Spurious Regression; Co-integration
3. Introduction to Panel Data Analysis [10 hours]
 - Meaning and nature of panel data
 - Basic concept of Panel data model
 - Pooled model, Fixed effects model, Random effect models, first-difference model
4. Limited Dependent variables [5 hours]
 - Choice based models- Properties, use, assumptions of Logistic, Probit, and Tobit regression models
 - Applications in economics

Practical Work: [20 hours]
Exposure to statistical packages, R/Python/E-Views/STATA, exercise will be provided in each week to demonstrate the models and their interpretation

Core Texts:

1. Koutsoyiannis, A, Theory of Econometrics
2. Marno Verbeek, 2017, "A Guide to Modern Econometrics", John Wiley & Sons, Ltd, 5th Edition.
3. Brooks, C., "Introductory Econometrics for Finance", Cambridge University press, 4th Edition, 2019
4. Baltagi, B.H. "Econometric analysis of panel data", John Wiley and Sons, 5th Edition, 2013

Additional Texts:

5. Pindyck, R.S. and Rubinfeld, D.L., "Econometric Models and Economic Forecasts" 4th Ed
6. Jeffrey M. Wooldridge Econometric Analysis of Cross Section and Panel Data, MIT Press
7. Wooldridge, J. M., "Introductory Econometrics: An Introductory Approach", South-Western, Cengage Learning, 5th Edition, 2013
8. Stock, J. H. and Watson, M. W., "Introduction to Econometrics", Pearson, 3rd Edition, 2015.
9. Enders, W., "Applied Econometric Time Series", Wiley 4th Edition, 2018.

Skill Enhancing Courses

Computer Fundamentals

Course Description: This course will acquaint students with the basics of computer terminology and the various ways that computers can be of assistance. The laboratory components will acquaint students with data analysis using tools of statistics, word processing, spreadsheets, and presentations, data cleaning, recoding and sorting, data visualization, summarizing data and an introduction to analysis of relationships between variables. At the end of the course student will be able to effectively use the Microsoft suite of application.

US1401 - Computer Fundamentals

Modules:

1. Introduction to Computers [7 hours]
 - History, Generations of Computers, Computer as multipurpose tool
 - Overview of the Computer system, Applications of computer
 - looking inside the machine, parts of the computer, shapes and types of computers
 - information processing cycle
2. Interacting with Computer [7 hours]
 - The Keyboard, the mouse, other input devices,
 - Monitor, Printers, Sound systems, Connecting I/O devices to the Computer
3. Storing information in a Computer [6 hours]
 - Types of storage devices, measuring units and measuring device performance
4. Processing Data [5 hours]
 - Transforming data into information, How a Computer processes data
 - factors affecting processing speed
5. Computer Software [7 hours]
 - Computer Languages, Number system,
 - Types of Software, Operating System-Introduction,
 - Types of Operating System, Translators
6. Problem solving aspects [6 hours]
 - Introduction, Problem definition, Problem analysis
 - Design of problem solution, Algorithm, Flowchart
 - Coding, Debugging, Program Documentation and Program maintenance
7. Computer Networks [6 hours]
 - Basic Block Diagram, Types of Networks
 - Network Architecture, Browsers and Search engine, Servers.

8. Information System [6 hours]
- What is an information System, types of information systems?
 - System development life cycle, Files and Folder Management
9. Computers in Business [4 hours]
- Why businesses need information, Types of business Software
 - Evolution of business computing
10. Security [6 hours]
- The Need for Computer Security, Basic Security Concepts
 - Threats to Users, Threats to Hardware, Threats to Data
 - Taking protective measures, Protecting Yourself, protecting your privacy, keeping your Data Secure

Core Texts:

1. Norton, P., "Introduction to Computers", McGraw Hill, 2008 Second edition, TMH.
2. Dromey – How to solve it by computer –PHI
3. Computer Fundamentals - P K Sinha, BPB

US1202 - Computer Laboratory i

Modules:

1. Basic Skills [2 hours]
 - In and out view of different components of computer (Hardware), booting the machine, GUI of desktop, input and output interfacing
2. MS Word [6 hours]
 - Introduction MS Word - Uses of Word Processor – Working with MS Word - Create a document, save a document, format a document, and make changes to it.
 - Explore the use of graphics and different fonts, understand and to make use of basic features of documents
3. MS Excel [Spreadsheets] [12 hours]
 - Introduction Spreadsheets - Uses of Spreadsheets - Anatomy of a Spreadsheet - Creating a Spreadsheet - Formatting a Spreadsheet-
 - Explore the tools available in spreadsheets, including formulas and calculations, Inserting and working on Graphs
4. MS Power Point Presentation [5 hours]
 - Introduction Power point presentation (PPT) – Uses of PPT
 - Creating and Formatting a Presentation - Slide Show Mode, Speaker Notes, and Outline Mode - Drawing Diagrams, Tables and Charts
5. Use of Excel for Statistical Analysis [35 hours]
 - Data Classification and Presentation - Cumulative Frequency Distribution - Bivariate Frequency Distributions - Tabulation of Data - Graphical Representation - Other Forms of Representation
 - Measures of Location and Dispersion - The Arithmetic Mean – The Median – The Mode – Geometric and Harmonic Mean – Other methods of Location: Quartiles, Deciles and Percentiles – Measures of Variations or Dispersion – The Variance and Standard Deviation. Correlation - Scatter diagram – correlation coefficient

Core Texts:

1. Berk, K. N. and Carey, P., "Data Analysis with Microsoft Excel, Duxbury Press, 2000.
2. Medhi .J, "Statistical Methods an introductory text".
3. Kenneth N. Berk and Patrick Carey, "Data Analysis with Microsoft Excel".
4. Wiley, "Microsoft Official Academic Course for 'Microsoft Word', 'Microsoft Excel', 'Microsoft PPT'".

US2201 - Computer Laboratory ii

Modules:

- 1. MS Word** [14 hours]
 - Advanced Word Processing - Managing Document Changes - Advanced Editing and Formatting - Protecting and Sharing Documents - Customizing Documents - Using Macros, Quick parts, and Content Links - Using Fields, Forms and Indexes
- 2. MS Access** [18 hours]
 - Overview of Microsoft Access Databases – Design and Create Tables to Store Data – Simplify Data Entry with Forms - Obtain Valuable Information Using Queries - Create Professional Quality Output with Reports – Design and Implement Powerful Relational Databases - Build User Friendly Database Systems
- 3. MS Excel** [16 hours]
 - Using office backstage - Using basic formulas - Using functions -Formatting cells and Ranges - Formatting worksheets - Managing worksheets - Working with data and Macros - Using advanced formulas - Securing and sharing workbooks - Creating charts - Adding pictures and shapes to a worksheet.
- 4. MS Power Point Presentation** [12 hours]
 - Create a new slide presentation - review each slide template
 - Duplicate, move and import slides - Insert pictures and video clips - manage add-ins and security options - Create handouts –
 - Create and apply master slides - Manage proofing options - manage language options -Use “Presenter Tools”- Connect to the projection system.
 - Working with GUI: Internet browser, E-Mail, Ecommerce, Utility software

Core Texts:

1. Wiley, “Microsoft Official Academic Course for ‘Microsoft Word’, ‘Microsoft Excel’, ‘Microsoft PPT”.
2. “Access 2016 Bible: The Comprehensive Tutorial Guide” by Michael Alexander and Dick Kusleika.

US3201 - Economics Laboratory

Course Description: Like all sciences, economics has its laboratory too – on the streets, in offices and shops, at home, in newspapers, and in the individual and collective imagination. Once the core micro and macroeconomics courses are completed, this course provides an opportunity to explore those same theoretical concepts outside textbooks and in this laboratory of the social sciences.

Modules:

1. Simulation games: The functioning of some concepts in economics are particularly amenable to being replicated and observed in the classroom. Concepts encountered and understood through the following games tend to ingrain themselves in the brain stronger.
 - Widgets production:
(<http://w3.marietta.edu/~delemeeg/expnom/s93.html#neral1>): The law of diminishing marginal productivity is not as intuitive as the law of diminishing marginal utility, yet can be illustrated by asking students to produce widgets.
 - Prisoners' Dilemma: This classic game can illustrate trust and cooperation issues, the difference between single period and repeated games, and the occurrence of sub-optimal results when cooperation would obviously yield better results. There are vast amounts of research using game theory to explain sub-optimal results – in the context of civic consciousness, environment, commons, among others.
 - Ultimatum game: to illustrate limits of rationality through notions of fairness
 - Deal or No Deal: A classroom version of the game that has been played on television in several countries can illustrate differing preferences regarding risk, and differing abilities to make calculations of expected utility between players. This is meant to illustrate the ability of the human brain to make calculations and valuations that are not obvious, and also the limits of rationality.
2. Nobel – 15 students will present a brief of the works of 15 Nobel Laureates. These presentations will be one component of internal assessment.
3. Weekly news analysis – the remaining students will present items of news from the previous week, and an analysis of the event using core micro or macroeconomic theoretical concepts. Students must be able to make connections between political discussions and their economic impacts. This will be one component of internal assessment.
4. Each student will choose two projects which should involve gathering primary and/or secondary data (qualitative and/or quantitative), employing concepts studied in any economics core subject to study a certain phenomenon. Students may wish to evaluate certain theories for their validity in various circumstances from their own data. Once-in-two-weeks discussions of these projects will be conducted with each student. These projects may get students to start thinking about their dissertation.

US4201 – Internship

Course Description: Students who have completed Semester IV must participate in an internship programme for a minimum of 4 weeks during the semester break before commencement of Semester V. This experience is meant to expose students to the professional environment and apply concepts studied in the classroom to the real world, so that they understand the power and limitations of theoretical models.

The reports that students will write on a regular basis are an important element in the evaluation for this course. Originality of content and adherence to deadlines are both to be taken seriously. Each student will submit at least 6 individual reports – a Preliminary Report, 4 Weekly Reports and a Concluding Report – which will account for a total of 40 marks.

Each student will make a final internship presentation to a panel of internal and external evaluators. This session will include an in-depth discussion, when the panel members will evaluate the level of commitment of the students and the learning achieved. This presentation will account for 35 marks. A student must earn at least 30 marks out of the total of 75 (40% of 75) to clear the internship component of the course.

US5401 - Business Analytics with R and Python

Course description: A comprehensive course on the use of Data Analytics to solve real world problems using R and Python, it will expose students to hands on training in optimization techniques, data mining, predictive modeling using time series forecasting and machine learning. It will cover the domains of marketing and retail analytics, web and social media analytics, finance and risk analytics and supply chain and logistics analytics.

Modules:

Data Analysis with R

1. Introduction [4 hours]
 - Merge, Rollup, Transpose and Append
 - Missing Analysis and Treatment
 - Outlier Analysis and Treatment
 - Summarizing and Visualizing the Important Characteristics of Data
 - Univariate, Bivariate Analysis
 - Crosstabs, Correlation
2. Linear Regression [6 hours]
 - What is Regression Analysis
 - Covariance and Correlation
 - Multivariate Analysis
 - Assumptions of Linearity Hypothesis Testing
 - Limitations of Regression
 - Implementing Panel data regression
 - Making Sense of Result Parameters
 - Model Validation
 - Handling Other Issues/Assumptions in Linear Regression
 - Handling Outliers, Categorical Variables, Autocorrelation, Multicollinearity, Heteroskedasticity Prediction and Confidence Intervals
3. Logistic Regression [2 hours]
 - Implementing Logistic Regression
 - Making Sense of Result Parameters: Wald Test, Likelihood Ratio Test Statistic, Chi-Square Test Goodness of Fit Measures
 - Model Validation: Cross Validation, ROC Curve, Confusion Matrix
4. Decision Trees [4 hours]
 - Introduction to Predictive Modelling with Decision Trees
 - Entropy & Information Gain
 - Standard Deviation Reduction (SDR)
 - Overfitting Problem

- Cross Validation for Overfitting Problem
- Running as a Solution for Overfitting

Project in R

Data Analysis with Python

- | | |
|--|-----------|
| 5. Basics of Python for Data Science | [4 hours] |
| <ul style="list-style-type: none"> - Python Basics - Data Structures in Python - Control & Loop Statements in Python - Functions & Classes in Python - Working with Data | |
| 6. Data Frame Manipulation | [6 hours] |
| <ul style="list-style-type: none"> - Data Acquisition (Import & Export) - Indexing - Selection and Filtering Sorting & Summarizing - Descriptive Statistics - Combining and Merging Data Frames - Removing Duplicates - Discretization and Binning - String Manipulation | |
| 2. Exploration of Data Analysis | [4 hours] |
| <ul style="list-style-type: none"> - Data Visualization & EDA | |
| 3. Time Series Forecasting | [4 hours] |
| <ul style="list-style-type: none"> - Understand Time Series Data - Visualizing Time Series Components - Exponential Smoothing - Holt's Model - Holt-Winter's Model - ARIMA - ARCH & GARCH | |
| 4. Unsupervised Learnings | [4 hours] |
| <ul style="list-style-type: none"> - K-Means Clustering | |
| 5. Dimensionality Reduction | [2 hours] |
| <ul style="list-style-type: none"> - Principal Component Analysis (PCA) - Factor Analysis | |

- | | |
|---|-----------|
| 6. Introduction to Machine Learning | [6 hours] |
| <ul style="list-style-type: none"> - Machine Learning Modelling Flow - How to treat Data in ML - Parametric & Non-parametric ML Algorithm - Types of Machine Learning - Performance Measures - Bias-Variance Trade-Off - Overfitting & Underfitting - Optimization Techniques - Scikit-Learn Library | |
| 7. Supervised Learning | [2 hours] |
| <ul style="list-style-type: none"> - Linear Regression - Linear Regression with Stochastic Gradient Descent, Batch GD | |
| 8. Logistic Regression | [2 hours] |
| <ul style="list-style-type: none"> - Logistic Regression with Stochastic Gradient Descent, Batch GD - Optimizing Learning Rate - Momentum | |
| 9. K Nearest Neighbour | [2 hours] |
| <ul style="list-style-type: none"> - Understanding KNN - Voronoi Tessellation - Choosing K - Distance Metrics – Euclidean, Manhattan, Chebyshev | |
| 10. Decision Tree & Random Forest | [4 hours] |
| <ul style="list-style-type: none"> - Fundamental Concepts of Ensemble - Hyper-Parameters | |
| 11. Support Vector Machines | [4 hours] |
| <ul style="list-style-type: none"> - What is SVM? - When to use SVM? - Understanding Lagrangian Multiplier, Karush Kuhn Tucker Conditions - SVM Kernels – Radial Basis Function, Gaussian Kernel, Linear Kernel | |

Project in Python

Practical

Of the above 60 hours, 40 hours, distributed across the syllabus, will be laboratory classes.

Core Texts:

1. Business Analytics: The Science of Data - Driven Decision Making Paperback – 2017, by U Dinesh Kumar

2. Learning Python 3 the hard way Z A Shaw
3. Learning R O'Relley

Additional readings:

4. R Cookbook: Proven Recipes for Data Analysis, Statistics, and Graphics Paperback, 2011,
5. Python Cookbook Paperback , 2013, by Brian Jones
6. R for Data Science: Import, Tidy, Transform, Visualize, and Model Data Paperback, 2017, Hadley Wickham
7. Machine Learning with R - Paperback – 31 Jul 2015, by Brett Lantz
8. Python: Programming Basics for Absolute Beginners (Step-By-Step Python Book 1), by Nathan Clark
9. The Python Quick Syntax Reference, 2013, by Gregory Walters
10. Introducing Python: Modern Computing in Simple Packages, by Bill Lubanovic
11. Python: For Beginners: A Crash Course Guide To Learn Python in 1 Week (coding, programming, web-programming, programmer), 2017, Timothy C. Needham and Python Language

US5402 - Research Methodology

Course Description: This course is a prerequisite for the Research Project that the students will undertake in Semester VI. The course introduces students to the foundations of social science research.

Modules:

1. Introduction [8 hours]
 - Objectives and motivation for social science research
 - Types of research, approaches, qualitative, quantitative triangulation
 - Steps, objectivity and subjectivity, values
 - Ethical issues
2. Research design [10 hours]
 - Identification of research gaps and needs
 - Formulation of research problem
 - Choice of method: quantitative, qualitative (historical/ case study/ interpretive/ narrative) methods
3. Sampling Design [8 hours]
 - Probability and non-probability sampling methods
 - Hypothesis testing
4. Measurement [8 hours]
 - Measurement in research, measurement scales
 - Sources of error
 - Tests of sound measurement
 - Developing measurement tools
5. Methods of Data Collection [8 hours]
 - Types of Primary and secondary data and their limitations
 - Biases in data collection
 - Databases
6. Processing and Analyzing Data [8 hours]
 - Editing, entering, problems encountered
 - Types of analysis: Parametric and non-parametric: univariate, bivariate, multivariate: regression and correlation, hypothesis testing
 - Tests: ANOVA, Correlation, regression – simple and multiple
6. Report Writing [10 hours]
 - Considerations in writing research report
 - critical appraisal of research

- documentation and bibliography
- academic writing conventions

Core Texts:

1. Cooper and Schindler, "Business Research Methods", McGraw Hill, 2010
2. Panneerselvam, R., "Research Methodology", Prentice Hall of India, 2006.

Additional Readings:

3. Jayaram, N. (ed.), "Knowing the Social World: Perspectives and Possibilities", 2017.
4. Kumar, R, "Research Methodology: A Step-by-Step Guide for Beginners", Sage, 2014.
5. Phanse, S, "Research Methodology: Logic, Methods, and Cases", OUP, 2016.
6. Wilkinson, T.S. and Bhandarker, P.L., "Methodology and Techniques of Social Research", Himalaya Publishing House, 2000.

US6601 - Research Project

Course Description: Each student must choose a research question and work on answering it through the various methods learnt through the programme. The final dissertation will need to be submitted to the School, after clearance is granted – based on the written dissertation, and a presentation – from their internal advisor and an external expert.

Ability Enhancing Courses

English

Course description: In an increasingly globalized world, vital skills need to be imparted to the students - to think critically and imaginatively, to communicate effectively and meaningfully, and to pursue learning as a lifelong activity and become agents of change. The different kinds of texts and specific professional skills that have been selected for study reflect the changing and eclectic nature of our world. Students are expected to develop the abilities of speaking, reading, writing, and listening, to use language for personal and inter-personal needs, and to develop powers of analytical, critical, creative and reflective thinking.

UA1401 - English i

Modules:

1. Introduction to the Four basic Skills of Reading, Listening, Speaking and Writing.
 - What is communication? Methods, Key stages in the communication cycle, Barriers, Principles of effective communication
 - Oral communication, Speaking skills, Listening skills, Non-verbal communication
2. Basic skills in practice
 - Interviews: Preparation, Researching the Company and job, list of questions, analyzing strengths and weaknesses, Preparing a transcript.
 - Telephonic Interviews, Basic techniques, Preparing a transcription.
3. Visual Analysis: Honing a critical ability to read and interpret, pictures, visual arguments
4.
 - Grammar building exercises
 - Comprehension Exercises
 - Punctuation
5. Poetry and Prose
 - The adventure of the three students Conan Doyle
 - The Refugee Pearl S Buck
 - On killing a tree Gieve Patel
 - Lamb to the slaughter Roald Dahl
 - Caged Bird Maya Angelou
 - Waiting for Visa Ambedkar
 - Toba Tek Singh Saadat Hasan Manto
 - The Taj Mahal Salman Rushdie

UA2401 - English ii

Modules:

1. - Business letters:
 - General format
 - Letter of Application
 - Letter of Complaint
 - Letter to the editor- Curriculum Vitae
2. Reports
 - Basic skills and techniques of writing reports.
 - Preparing a report- objectives: audience; Plan, Draft, Editing
 - Final Report - Introduction, Body (organization, style and references), Conclusion
3. Group Discussion
 - Team Spirit and Group dynamics
 - Co-operation and co-ordination
 - Leadership qualities and individual participation.
4. Film Analysis / Review, Advertisements
5. Poetry and Prose:

- Rhetoric for Advertising	Hershberg
- Why I want a Wife	Judy Brady
- Telephone Conversation	Wole Soyinka
- Wall	Dadlalkar
- Stanford Address	Steve Jobs
- 6. Rule Britannia	Kamala Das
- 7. Shooting an Elephant	George Orwell
- 8. Presents from my aunts in Pakistan	Moniza Alvi

UA1202 - Kannada i

ಪ್ರಸ್ತಾವನೆ: ಸಾಹಿತ್ಯದ ಅಭಿರುಚಿಯ ನಿರ್ಮಾಣ ಮತ್ತು ಭಾಷಾ ಕಲಿಕೆಯ ಉದ್ದೇಶವನ್ನು ಪಠ್ಯಕ್ರಮ ಹೊಂದಿರುತ್ತದೆ. ಅರ್ಥಶಾಸ್ತ್ರವನ್ನು ವಿದ್ಯಾರ್ಥಿಗಳ ಪ್ರಧಾನವಾಗಿ ಅಭ್ಯಾಸ ಮಾಡುತ್ತಿರುವುದರಿಂದ 'ಅದಕ್ಕೆ ಪೂರಕವಾದ ಸೃಜನಶೀಲ ಸಾಹಿತ್ಯ ಕೃತಿಗಳನ್ನು ಮತ್ತು ವೈಚಾರಿಕ ಕೃತಿಗಳನ್ನು ಪ್ರಾತಿನಿಧಿಕವಾಗಿ ಆರಿಸಲಾಗುತ್ತದೆ. ಎರಡು ಸೆಮಿಸ್ಟರ್‌ಗಳಲ್ಲಿ 100 ಅಂಕಗಳ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗಳಿದ್ದು ಬೇರೆ ಬೇರೆ ರೀತಿಯ ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿರುತ್ತದೆ. 1ನೇ ಸೆಮಿಸ್ಟರ್ (ಒಟ್ಟು ಬೋಧನಾ ಅವಧಿ 30 ಗಂಟೆಗಳು)

ಹಳಗನ್ನಡ ಕಾವ್ಯ

1. ಪಂಪ ಭಾರತದಿಂದ ಆಯ್ದ ಬರಹ ಬಾಹುಬಲಿ ಸಂಘರ್ಷ (20 ಪದ್ಯಗಳು)
2. ಕುಮಾರ ವ್ಯಾಸ ಭಾರತದಿಂದ ಆಯ್ದ ಉತ್ತರ ಕುಮಾರನ ಪ್ರಸಂಗ

ನಡುಗನ್ನಡ ಕಾವ್ಯ

1. ವಚನಗಳು
2. ಕೀರ್ತನೆಗಳು

ಹೊಸಗನ್ನಡ ಕಾವ್ಯ

1. ಕುರುಡು ಕಾಂಚಾಣ ದ.ರಾ. ಬೇಂದ್ರೆ
2. ದೇವರು ರಜು ಮಾಡಿದನು ಕುವೆಂಪು
3. ಅಂಬೇಡ್ಕರ್ - ಡಾ. ಸಿದ್ಧಲಿಂಗಯ್ಯ

ಗದ್ಯ

1. ಮೊಸರಿನ ಮಂಗಮ್ಮ ಡಾ. ಮಾಸ್ತಿ ವೆಂಕಟೇಶ ಅಯ್ಯಂಗಾರ್
3. ಕನ್ನಡ ಮೌಲ್ವಿ ಗೂರೂರು ರಾಮಸ್ವಾಮಿ ಅಯ್ಯಂಗಾರ್
4. ಪಶ್ಚಿಮ ಘಟ್ಟಗಳ ಪತನ - ನಾಗೇಶ್ ಹೆಗಡೆ

ಭಾಷಾ ಕಲಿಕೆ

1. ಕನ್ನಡ ಭಾಷೆ ಮತ್ತು ವ್ಯಾಕರಣ
2. ಪದರಚನೆ, ವಾಕ್ಯ ರಚನೆ
3. ಜಾಹಿರಾತುಗಳು, ಇಂಗ್ಲೀಷಿನಿಂದ ಕನ್ನಡಕ್ಕೆ ಅನುವಾದ (ಅರ್ಥಶಾಸ್ತ್ರಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ಲೇಖನಗಳು)

UA2202 - Kannada ii

ಹಳಗನ್ನಡ ಕಾವ್ಯ

1. ರನ್ನನ ಗದಾಯುದ್ಧ ಕಾವ್ಯದಿಂದ ಕುರುಕುಲಾರ್ಕನುಮರ್ಕನುಮಸ್ತಮೆಯಿದ್ದರ
2. ಹರಿಹರನ ಅತಿಭಕ್ತನ ರಗಳೆ
3. ರಾಘವಾಂಕನ ಹರಿಶ್ಚಂದ್ರ ಕಾವ್ಯದಿಂದ ಗಾನರಾಣಿಯರ ಪ್ರಸಂಗ
4. ಡಾ.ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪನವರ ಚರಿತ್ರೆಯ ಕಾಲಜ್ಞಾನ

ಗದ್ಯ:

1. ಕುವೆಂಪು ಅವರ 'ಮೀನಾಕ್ಷಿ ಮನೆ ಮೇಷ್ಟ್ರು' ಕಥೆ
2. ಸಾ.ರಾ. ಅಬೂಬಕರ್ ಅವರ ಚಪ್ಪಲಿಗಳು ಕಥೆ

ಪ್ರಬಂಧ:

1. ಡಾ. ಶಿವರಾಮ ಕಾರಂತರ ನಮ್ಮ ಅಳತೆಯನ್ನು ಮೀರಲಾರದ ದೇವರು
2. ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿಯವರ ಅವಾಂತರದ ಸೀನಪ್ಪ

ಭಾಷಾಕಲಿಕೆ:

1. ಸಮೂಹ ಮಾಧ್ಯಮಗಳಲ್ಲಿ ಕನ್ನಡ ಬಳಕೆ
2. ನಾಮಪದ, ಕ್ರಿಯಾಪದ (ಭಾಷಾ ವಿಜ್ಞಾನದ ಹಿನ್ನೆಲೆಯಲ್ಲಿ)
3. ಕೆ.ವಿ. ನಾರಾಯಣ ಅವರ ಲೇಖನದ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ಕನ್ನಡ ಎದುರಿಸುತ್ತಿರುವ ಬಿಕ್ಕಟ್ಟು

ಸ್ವಿಜ್ಞೆ: ಟಿ.ಪಿ.ಕೈಲಾಸಂರವರ ಟೊಳ್ಳು ಗಟ್ಟಿ

ಆಧಾರ ಗ್ರಂಥಗಳು:

1. ಕನ್ನಡ ಕಾವ್ಯ ಸಂಚಯ, ಸಂ: ಡಾ. ರಂ.ಶ್ರೀ ಮುಗಳಿ
2. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ - ಡಾ. ರಂ.ಶ್ರೀ ಮುಗಳಿ
3. ಕನ್ನಡಕ್ಕೆ ಬೇಕು ಕನ್ನಡ ವ್ಯಾಕರಣ ಡಿ.ಎನ್. ಶಂಕರಭಟ್ಟ
4. ಬೇರು ಕಾಂಡ ಚಿಗುರು ಕೆ.ವಿ. ನಾರಾಯಣ
5. ತೊಂಡು ಮೇವು - ಕೆ.ವಿ. ನಾರಾಯಣ
6. ವಚನ ಸಾಹಿತ್ಯ ಡಾ.ಎಂ. ಚಿದಾನಂದ ಮೂರ್ತಿ
7. ಕುಮಾರ ವ್ಯಾಸ ಕೀರ್ತಿನಾಥ ಕುರ್ತಕೋಟಿ

ಶಿವರಾಮ ಕಾರಂತ ನಮ್ಮ ಅಳತೆಯನ್ನು ಮೀರಲಾರದ ದೇವರು

Hindi

लक्ष्य:

1. छात्रों को हिंदी के गद्य एवं पद्य के प्रतिनिधी रचनाकारों का परिचय एवं हिंदी साहित्य के प्रति छात्रों की रूचि बढ़ाना।
2. कहानी, कविता आदि विधाओं के माध्यम से छात्रों को भावात्मक विकास की तरफ आकर्षित करना।
3. अनुवाद, संक्षिप्तीकरण आदि के माध्यम से छात्रों को भाषा के रचनात्मक पहलुओं से परिचित कराना।

UA1203 – Hindi i

1. कविता संग्रह:

- | | |
|--------------------------|-----------------------------|
| - तोड़ती पत्थर | सूर्यकांत त्रिपाठी "निराला" |
| - शब्द | मोहनदास नैमिशराय |
| - सात भाइयों के बीच चंपा | कात्यायिनी |
| - स्त्री-विमर्श | नीलेश रघुवंशी |
| - ऐ शरीफ इंसानों | साहिर लुधियानवी |
| - कारवाँ गुज़र गया | गोपालदास "नीरज" |

2. कहानियाँ:

- | | |
|-----------------------|-------------------|
| - ठाकुर का कुआँ | मुंशी प्रेमचंद्र |
| - पिता | ज्ञानरंजन |
| - पच्चीस चौका डेढ़ सौ | ओमप्रकाश वाल्मीकि |
| - परिदे | निर्मल वर्मा |
| - शिष्टाचार | भीष्म साहनी |
| - पत्नी | जैनेन्द्र कुमार |

3. व्याकरण:

- विकारी शब्द, संज्ञा, सर्वनाम, क्रिया, विशेषण

4. अनुवाद

5. संक्षिप्तीकरण

संदर्भ ग्रंथ

1. "अनुवाद कला", डॉ. भोलानाथ तिवारी
2. "अभिनव व्यावहारिक हिंदी", परमानन्द गुप्त
3. "व्याकरण", प्रोफेसर नागप्पा
4. "देह न देना (संग्रह)", हिंदी बुक सेंटर - दरिया गंज
5. "नीलेश रघुवंशी - अंतिम पंक्ति में (संग्रह)", अमन प्रकाशन, नई दिल्ली
6. "आधुनिक हिंदी व्याकरण और रचना", डॉ. वासुदेव नंदन प्रसाद

1. एकांकी संग्रह (15 घंटे)

अ .बहुत बडा सवाल	मोहन राकेश
आ . सीमा रेखा	विष्णु प्रभाकर
इ .स्ट्राइक	भुवनेश्वर
ई . यह मेरी जन्मभूमि है	हरिकृष्ण 'प्रेमी'
उ .मकड़ी का जाला	जगदीश चंद्र माथुर

2. जीवनी (10 घंटे)

- १ .डा.वि.के.आर.वि.राव
- २ .मुहम्मद यूनूस
- ३ .डा.बाबा साहेब अम्बेडकर
- ४ .रतन नवल टाटा
- ५ .एन.आर.नारायण मूर्ति

3. व्याकरण (5 घंटे)

- १ .अविकारी शब्द —
क्रिया विशेषण, संबंधबोधक, समुच्चयबोधक, विस्मयादिबोधक

4. अनुवाद (5 घंटे): शब्दावली

5. चलचित्र समीक्षा (15 घंटे)

- १ .पिक २ .तारे जमीन पर ३ .भाग मिलका भाग ४ .दंगल ५ .लगान ६ .शहीद भगत सिंह

संदर्भ ग्रंथ:

- १ .अनुवाद विज्ञान – डा .भोलानाथ तिवारी
- २ .हिंदी व्याकरण - डा .हरदेव बाहरी
- ३ .हिंदी एकांकी का विकास – त्रिभुवन सिंह
- ४ .हिंदी साहित्य का इतिहास – डा .नगेन्द्र
- ५ .व्यावहारिक हिंदी – डा .परमानंद गुप्त
- ६ .हिंदी व्याकरण– आर.पी .विश्वेन्दु

UA1204 – Basic Kannada and Hindi i

ಅಶಯ: ಕನ್ನಡ ಭಾಷಾ ಕೌಶಲ್ಯವನ್ನು ಅಭಿವೃದ್ಧಿಪಡಿಸುವುದು – ಓದಲು, ಬರೆಯಲು, ಮಾತನಾಡಲು ಮತ್ತು ಅರ್ಥ ಮಾಡಿಕೊಳ್ಳಲು ಕಲಿಸುವುದು.

1. ವರ್ಣಮಾಲೆ – ಸ್ವರ, ವ್ಯಂಜನ ಮತ್ತು ಒತ್ತಕ್ಷರಗಳು
2. ಕಾಗುಣಿತ
3. ಬಣ್ಣಗಳ ಹೆಸರು
4. ಹಣ್ಣು ತರಕಾರಿಗಳ ಹೆಸರು
5. ಹೂವುಗಳ ಹೆಸರು
6. ಪಶು ಪಕ್ಷಿಗಳ ಹೆಸರು
7. ಕನ್ನಡ ಅಂಕಿಗಳು
8. ಲಿಂಗ ಮತ್ತು ವಚನ ಪ್ರಯೋಗಗಳು
9. ದೋಷಪೂರ್ಣ ವಾಕ್ಯಗಳನ್ನು ಸರಿಪಡಿಸುವುದು
10. ಅನುವಾದ – ಸಣ್ಣ ಸಣ್ಣ ವಾಕ್ಯಗಳನ್ನು ಕನ್ನಡದಿಂದ ಇಂಗ್ಲೀಷ್‌ಗೆ ಅನುವಾದಿಸುವುದು
11. ಸಾಮಾನ್ಯ ಪ್ರಬಂಧ ರಚನೆ – 10 ರಿಂದ 15 ವಾಕ್ಯಗಳು

उद्देश्य : हिंदी भाषा कौशल बढ़ाना – सुनना ,बोलना ,पढ़ना ,लिखना (२५ घंटे)

१. वर्णमाला – स्वर ,व्यंजन ,संयुक्ताक्षर
२. बारहखडी
३. रंगों के नाम
४. साग-सब्जियों के नाम
५. फल-फूलों के नाम
६. पशु-पक्षियों के नाम
७. हिंदी अंक और शब्द– १ से ३०
८. लिंग और वचन– प्रयोग की दृष्टि से
९. अशुद्ध वाक्यों को शुद्ध करना – सही प्रयोग की दृष्टि से
१०. अनुवाद– छोटे-छोटे वाक्य) हिंदी से अंग्रेजी में(
११. सामान्य निबंध –१० से १२ वाक्य

UA2204 – Basic Kannada and Hindi ii

ಅಶಯ: ಕನ್ನಡ ಭಾಷಾ ಕೌಶಲ್ಯವನ್ನು ಅಭಿವೃದ್ಧಿಪಡಿಸುವುದು – ಓದಲು, ಬರೆಯಲು, ಮಾತನಾಡಲು ಮತ್ತು ಅರ್ಥ ಮಾಡಿಕೊಳ್ಳಲು ಕಲಿಸುವುದು.

1. ಸಮಾನಾರ್ಥಕ ಪದಗಳು
2. ವಿರುದ್ಧಾರ್ಥಕ ಪದಗಳು
3. ನಾನಾರ್ಥಕ ಪದಗಳು
4. ನಾಮಪದ ಮತ್ತು ಕ್ರಿಯಾಪದ
5. ಕನ್ನಡ ಅಂಕಿಗಳು
6. ತಿಂಗಳುಗಳ ಹೆಸರುಗಳು
7. ವಾರಗಳ ಹೆಸರುಗಳು
8. ಅನುವಾದ – ಕನ್ನಡದಿಂದ ಇಂಗ್ಲೀಷ್‌ಗೆ ಮತ್ತು ಇಂಗ್ಲೀಷ್‌ನಿಂದ ಕನ್ನಡಕ್ಕೆ
9. ಸ್ವಂತ ವಾಕ್ಯದಲ್ಲಿ ಬರೆಯಿರಿ
10. ಅರ್ಥಗಳನ್ನು ಬರೆಯಿರಿ
11. ಕಥಾ ಲೇಖನ
12. ಚಿತ್ರ ನೋಡಿ ಪ್ರಬಂಧ ಬರೆಯುವುದು
13. ಸಂವಾದ – ಮೌಖಿಕ ಪರೀಕ್ಷೆಗೆ

ಸಂದರ್ಭ ಗ್ರಂಥ:

1. ಹಿಂದಿ ಸುಮನ ಕರ್ನಾಟಕ-ಪಾಠ್ಯ ಪುಸ್ತಕ ಸಂಘಬೆಂಗಳೂರು,ಕರ್ನಾಟಕ ಸರ್ಕಾರ, (ಪ್ರಥಮ ಕಕ್ಷಾ)
2. ಹಿಂದಿ ವಾಹಿನಿಬೆಂಗಳೂರು,ಕರ್ನಾಟಕ ಸರ್ಕಾರ,ಪಾಠ್ಯ ಪುಸ್ತಕ ನಿರ್ದೇಶಾಲಯ- (ಛಠಿ ಕಕ್ಷಾ)
3. ಹಿಂದಿ ವಲ್ಲರಿ(ಛಠಿ ಕಕ್ಷಾ)ಬೆಂಗಳೂರು,ಕರ್ನಾಟಕ ಸರ್ಕಾರ ,ಕರ್ನಾಟಕ ಪಾಠ್ಯ ಪುಸ್ತಕ ಸಂಘ-
4. ಹಿಂದಿ ಸರಿತಾಬೆಂಗಳೂರು,ಕರ್ನಾಟಕ ಸರ್ಕಾರ ,ಕರ್ನಾಟಕ ಪಾಠ್ಯ ಪುಸ್ತಕ ಸಂಘ- (ಪ್ರಥಮ ಕಕ್ಷಾ)
5. ಅರಲು ಮಲ್ಲಿಗೆಕರ್ನಾಟಕ,ರಾಜ್ಯ ಶಿಕ್ಷಾ ಅನುಸಂಧಾನ ತಥಾ ಪ್ರಶಿಕ್ಷಣ ವಿಭಾಗ- ಸರ್ಕಾರ',ಬೆಂಗಳೂರು ,ಕರ್ನಾಟಕಾ
ಚಾಫಲ್ಡ ಲೆಬರ ಪ್ರಾಜೆಕ್ಟಕೆ' ಅಧೀನ ಪ್ರಕಾಶಿತ
6. ಹಿಂದಿ ರೀಡರಬೆಂಗಳೂರು ,ಸುಭಾಷ ಪಬ್ಲಿಶಿಂಗ ಹಾಁಸ-
7. ಹಿಂದಿ ವ್ಯಾಕರಣ ಔರ ರಚನಾ-ಜಾನ ಆಲಮುಕಲ-ರಾಯಲ ಬುಕ್ಸಕೊಡ್ರಾಯಮ,
8. ಹಿಂದಿ ವ್ಯಾಕರಣ-ವಿಶ್ವೇದು.ಪಿ.ಆರ-ಸರಸ್ವತಿ ಪ್ರಕಾಶನಬೆಂಗಳೂರು,ಚೆನ್ನೈ,ದಿಲ್ಲೀ,
9. ಹಿಂದಿ ವ್ಯಾಕರಣ-ಕೆ-ಕೃಷ್ಣನ ನಮ್ಬದೀರಿ.ಕೆ.ಲೊಕಭಾರತೀ ಪ್ರಕಾಶನಁಲಹಾಬಾದ,

UA2205: Environmental Studies

Course Description: “The importance of environmental studies cannot be disputed. ... Continuing problems of pollution, loss of forest, solid waste disposal, degradation of environment, issues like economic productivity and national security, global warming, the depletion of ozone layer and loss of biodiversity have made everyone aware of environmental issues. ... In spite of the deteriorating status of the environment, study of environment has so far not received adequate attention in our academic programmes. Recognizing this, the Hon’ble Supreme Court directed the UGC to introduce a basic course on environment at every level in college education.” [<https://www.ugc.ac.in/oldpdf/modelcurriculum/env.pdf>] This course covers all topics recommended by the UGC.

Modules:

1. Multidisciplinary nature of environmental studies
 - Definition, scope and importance
 - Need for public awareness.
2. Natural Resources
 - Renewable and non-renewable resources: Natural resources and associated problems.
 - Equitable use of resources for sustainable lifestyles.
3. Ecosystems
 - Concept of an ecosystem
 - Structure and function of an ecosystem
 - Producers, consumers and decomposers
 - Energy flow in the ecosystem
 - Ecological succession
 - Food chains, food webs and ecological pyramids
 - Introduction, types, characteristic features, structure and function of various ecosystems
4. Biodiversity and its conservation
 - Introduction – Definition : genetic, species and ecosystem diversity
 - Biogeographical classification of India
 - Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values
 - Biodiversity at global, National and local levels
 - India as a mega-diversity nation
 - Hot-spots of biodiversity
 - Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts
 - Endangered and endemic species of India
 - Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity

5. Environmental Pollution Definition

- Cause, effects and control measures of various types of pollution
- Solid waste Management: Causes, effects and control measures of urban and industrial wastes
- Role of an individual in prevention of pollution
- Pollution case studies
- Disaster management : floods, earthquake, cyclone and landslides.

6. Social Issues and the Environment

- From Unsustainable to Sustainable development
- Urban problems related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people; its problems and concerns. Case Studies
- Environmental ethics : Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies
- Wasteland reclamation
- Consumerism and waste products
- Environment Protection related legislation
- Issues involved in enforcement of environmental legislation
- Public awareness

7. Human Population and the Environment

- Population growth, variation among nations
- Population explosion – Family Welfare Programme
- Environment and human health
- Human Rights
- Value Education
- HIV/AIDS
- Women and Child Welfare
- Role of Information Technology in Environment and human health

8. Field work

- Visit to a local area to document environmental assets
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural
- Study of common plants, insects, birds
- Study of simple ecosystems-pond, river, hill slopes, etc.

Core Text:

1. Barucha, E, 2004, Textbook for Environmental Studies: For Undergraduate Courses of all branches of Higher Education, for UGC

UA3401 – Foreign Language
German Language Learning Program – Level 1

Course Description: Foreign Language study creates more attitudes that are positive and less prejudice towards people, analytical skills are improved, creativity is increased and dealing with another culture enables people to gain a more profound understanding of their own culture. International travel is made easier and more pleasant through knowing a foreign language. Learning foreign language would enhance one's job opportunities as well as provide a competitive edge in career choices. The Students are made to learn German Language communication skills i.e., listening, speaking, reading, & writing with the various aspects of day-to-day life with an active vocabulary, expression, grammar and pronunciation.

Modules:

1. Guten Tag! (Good day):
Expressing greetings & goodbyes, introducing self & others, talk about self and others, count till 20, quote telephone number and Email address, spell out phonetically, talk about Countries and Languages.
2. Freunde, Kollegen Und ich (Friends, Colleagues and I):
Talk about hobbies, fix an appointment, name weekdays, talk about work, professions and work time, count from 20, talk about seasons, construct a profile in Internet.
3. In der Stadt (In the City):
Name the places and buildings, ask question about places, arrange a picture story, ask for things, name the transportation, ask question about the way and describe the way, understand text with international words, learning articles.
4. Guten Appetit! (Good Appetite):
Talk about food, plan a shopping, lead conversation about shopping, lead conversation about food, understand text with W – Questions, arrange and learn words.
5. Tag für Tag (Day to Day):
Understand and quote time, make a timetable, talk about family, fix an appointment, apologize for being late and react to it, make an appointment by phone.
6. Zeit mit Freunden (Time with Friends):
Plan something together, talk about birthday, understand and write an Invitation, order and pay in restaurant, talk about a result, find definite information in text, understand radio tips.
7. Kontakte(Contact):

Agree for an appointment, give and understand Instructions, reply and understand letters, talk about language learning, recognize conversation situation, understand conversation.

8. Meine Wohnung (My House):
Understand advertisement about houses, describe a house, plan about house furnishing, reply in writing an Invitation, talk about furnishing house, express likes and dislikes, talk about types of houses, write a Text about House.
9. Alles Arbeit? (All is work?):
Describe a schedule, speak about past, understand job advertisement, express opinion about Jobs, understand blogs about jobs, prepare for a telephone conversation & inquiry, speak about Jobs.
10. Kleidung und Mode (Clothes and Fashion):
Talk about clothes, understand the chat about shopping, talk about past events, lead conversation about clothes shopping, orient oneself in departmental store, understand and research about Berlin.

Having learnt all of the above aspects, to enhance the communication skills powerfully and joyfully students would go with role plays, watching movies, singing songs, mind mapping, interviewing people, theme activities.

Core Texts:

1. Netzwerk Deutsch als Fremdsprache (Kursbuch & Arbeitsbuch)
2. Studio d A1 Deutsch als Fremdsprache (Kursbuch & Übungsbuch)

UA3402 - Constitutional Economics

Course Description: This is a Foundation course that takes into account UGC requirements of a study of the Indian Constitution. This study of the Indian Constitution becomes a backdrop to study its impact on the economy.

Modules:

1. Basic Features of the Indian Constitution [20 hours]
 - Philosophy: Features and Preamble; Fundamental Rights and Duties; DPSP
 - Union and State executive, Legislature and Judiciary: Powers and Functions of the Union Parliament and State Legislature; President, Prime Minister and Council of Ministers; State Governor, Chief Minister and Council of Ministers; Powers and Functions of the Supreme Court and High Court
 - Concept and development of human rights: Meaning, Scope and Development of Human Rights; UNHCR; UDHR 1948, ICCPR 1996
 - Human rights in India: Protection of Human Rights Act, 1993 (NHRC, SHRC); First, Second and Third Generation Human Rights; Judicial Activism and Human Rights
2. Financial Relations in the Quasi-Federal Structure [10 Hours]
 - Center- State financial relations
 - planning, budgetary allocations and their application
 - law- making power
 - Central and State lists
3. Decentralization [10 Hours]
 - Devolution of functions and powers of the State to local self-government institutions
 - Participatory model of governance
4. Inter-State Trade and Commerce [10 Hours]
 - Economic unity of India
 - Concessions for, restrictions on trade; special status for certain States
 - GST
5. Changing dimensions of the Indian Constitution [10 Hours]
 - Impact of the new international economic order
 - Scope of DPSP, interpretation of rights
 - Resource management
 - Structures and schemes of governance; system of justice dispensation

Core Texts:

1. Krishnaswamy, S., "Democracy and Constitutionalism in India: A Study of the Basic Structure Doctrine", Oxford University Publication, 2010.
2. Basu, D. D., "Commentary on The Constitution Of India", Lexis Nexis, 2nd Ed., Vol 1-2, 2015.
3. Seervai, H. M., "The Indian Constitution", Vol-I, II & III
4. Austin G. S., "The Indian Constitution: Cornerstone of A Nation", Oxford, 1999.

Elective Courses

UDE101 - Economics of Discrimination

Course Description: This course would provide the students an understanding of the nature of the Economic Discrimination. Further, the students will be taught the validity of several alternative economic theories of Discrimination and how to assess the impact of Public policies to combat discrimination.

Modules:

1. Caste-Historical and Contextual Perspective [15 hours]
Brief History of Caste in India; Evolution of Varna and Caste; Dogmatic Theories of Varna and Caste; Sociological Perspectives on Caste in a Context; Ambedkar on Caste and Discrimination; Social Exclusion: Concepts and types; Caste based Discrimination; Economics of Caste and Untouchability; Caste and Caste system; the concept of discrimination and its analogues: humiliation, exclusion, stigmatisation and marginality; caste-specific discrimination
2. Introduction to Economics of Discrimination [15 hours]
Meaning and spread of discrimination; Historical perspective on Discrimination; Causes and forms of Economic Discrimination; Economic theories of Discrimination- Neoclassical theories and institutional; Some Theories - Gary Becker (Taste for Discrimination); George Akerlof (Identity theory of Discrimination); Herbert Blumer's theory of discrimination, Arrow, K. (Uncertainty and Asymmetric Information), and Phelps E (Statistical Theory of Discrimination), Madden (Monopsony in the Labour Market), Tzannatos (General Equilibrium Theory of Discrimination)
3. Inequality and Discrimination [10 hours]
Inequality and Discrimination; Group-based Inequality and Inter-personal Inequality; Perpetuation of Inequality, Poverty due to Discrimination
4. Markets and Discrimination [10 hours]
Markets: Factors of Production Land, Labour, Capital; Credit, consumer market and housing; Gender, Education, Employment and Occupation; Merit and equal opportunity
5. Discrimination in the Indian Context [10 hours]
Caste, Untouchability and Gandhian Economics; India's Preferential Policy System and its Outcome- Dr Ambedkar's approach towards economics of Caste, and Untouchability, Gandhian views of Economic dimension of Caste system; Role of State and Positive Discrimination, Affirmative Action: Best Practices in the World

Readings:

1. Ambedkar, B. R., "Castes in India: Their Mechanism, Genesis and Development", Paper Presented at Anthropology Seminar, 1916.
2. Ambedkar, B. R., "Annihilation of Caste", 1935, Paperback Version, 2008.
3. Sengupta, A., "Human Rights and Extreme Poverty", *Economic and Political Weekly*, 85-93, 2010.
4. Ketkar S. V., "History of Caste in India: The Evidence of the Laws of Manu on the Social Conditions in India During The Third Century A.D", Messrs. Taylor and Carpenter Booksellers and Publishers, 1909.
5. Srinivas, M. N., "Caste: Its Twentieth Century Avatar", Penguin, Imprint, 2000"
6. Bailey F. G., "Tribe, Caste and Nation", Manchester University Press; Reprint edition 1960.
7. Ghurye G. S., "Caste and Race in India", Popular Prakashan Private Limited, 6th edition, 2011.
8. Akerlof, A. G., "The Economics of Caste and of the Rat Race and other Woeful Tales", *Quarterly Journal of Economics*, 90, 59-617, 1976.
9. Akerlof, G. A. and Kranton, R. E., "Identity Economics: How Our Identities Shape Our Work, Wages and Well-being", Princeton University Press, 2011.
10. Becker, G., "The Economics of Discrimination, Chicago", University of Chicago Press, 2nd Edition, 1971.
11. Blumer, H., "Race prejudice as a sense of group position, *Pacific Sociological Review*, Spring, Vol 1, P.3, 1958.
12. Darity, W. and Deshpande, A., "Boundaries of Clan and Color", Routledge, 2003.
13. Jodhka, S. S., "Caste: A Short Introduction", Oxford University Press, 2013.
14. Prakash, A., "Dalit Capital: State, Market and Civil Society in Urban India", Routledge, 2015.
15. Scoville, J., "Labour Market Underpinnings of a Caste Economy", *The American Journal of Economics and Sociology*, Vol. 55, No. 4, Pp.3 85-394, 1996.
16. Sharma, U., "Caste", Open University Press, 1999.
17. Thorat, S. K., "Caste System in India: Social and Economic Exclusion and Poverty", Indian Institute of Dalit Studies, 2004.
18. Thorat, S. K., "Caste, Social Exclusion and Poverty Linkages: Concept, Measurement and Empirical Evidences", 2005.
19. Weber, M., "Economy and Society", Edited by Guenther Roth and Claus Wittich Bedminster Press, 1968.
20. Madden, J. F., "The Economics of sex discrimination". Lexington, Mass: D.C Health and Co., 1975.
21. Hann, A. D., "Poverty and social exclusion: A comparison of debates on deprivation", Working Paper No.2, Poverty Research Unit at Sussex, Brighton: University of Sussex, 1997.
22. Tzannatos, Z., "A General Equilibrium Model of Discrimination and Its Effects On Income". *Scottish Journal of Political Economy*, 34 (1), 19-36, 1987.
23. Sen, A. K., "Social exclusion: Concept, application and scrutiny", Working Paper, Social Development Paper No. 1, Asian Development Bank, 2000.

UDE104 - Political Economy

Course Description: The course introduces the structural dynamics among markets and institutions. The course will also explore the relationship of social and political forces in the context of development.

Modules:

1. Perspectives on Political Economy [10 hours]
Introduction to Political Economy, Classical Political Economy (Adam Smith), Transitions to Marxist Political Economy, Dependency Theory, Rational Choice, Rise of New Political Economy
2. Capitalism as an Evolving Economic System [10 hours]
 - Changing Dynamics of Organization of Production, Market and Labor Process – Changing Nature of Job Security – Accumulation and Crisis – Modern Corporations
 - Changing Role of Finance in Capital Accumulation and Corporate Structure
 - Political leadership and economic management
3. Challenges to Welfare State in the age of Capitalism [10 hours]
The State and Economy – Contestation and Mutual Interdependence – Imperialism – Globalization and challenges to Welfare State – Development and State Autonomy
4. Democracy, Authoritarianism and Development [20 hours]
East Asia, Latin American and India as Case Studies
5. Social Dimension [10 hours]
Globalization and Unbalanced Development – Issues in Gender, Environment, Sustainability, Equity and Exclusion

Readings:

1. Amin, A. (ed.), "Post Fordism: A Reader", Blackwell, 1994.
2. Beaud, M., "A History of Capitalism, 1500-2000", Trans. By Tom Dickman and Anny Lefebvre, Monthly Review Press, 2001.
3. Gurley, J., "The Materialist Concept of History", in R. Edwards, M. Reich and T. Weisskopf (ed.), *The Capitalist System*, 2nd Edition, 1978.
4. Habib, I., "Capitalism in History", *Social Scientist*, Vol. 23, 1995.
5. Heilbroner, R. L., "Capitalism", in the *New Palgrave Dictionary of Modern Economics*, Macmillan, 1987.
6. Lange, O., "Political Economy", Vol. 1, 1963.
7. Shaikh, A, "Entries on 'Economic Crisis' and 'Falling Rate of Profit' in T. Bottomore, et al. (eds.), *The Dictionary of Marxist Thought*, OUP, Maya Blackwell, 2000.
8. Sweezy, P., "The Theory of Capitalist Development", Monthly Review Press, 1942.
9. Tonkiss, F., "Contemporary Economic Sociology: Globalization, Production, Inequality", Routledge, 2008.

UDE105 - Environmental Economics

Course Description: This course covers how economic principles are applied to environmental issues and their management through various economic institutions, economic incentives, and other instruments and policies. Economic implications of environmental policy are also addressed as well as valuation of environmental goods and services. In addition the course also covers issues pertaining to sustainable development and international environmental problems such as climate change, trade and environment. In each of the topics discussed in this course, specific examples from the Indian context will be analysed in detail.

Modules:

1. Introduction [10 hours]
Concepts - Environmental and Ecological and natural resources Economics – Historical Perspectives (classical, neo-classical and modern) – Nature and Scope of Environmental Economics - The Environment and Economics Interactions – Environment and Development – Sustainable Development – Concept [renewable and non-renewable resources; need for public awareness; ecosystems: concepts and functions (forest, desert, grassland, aquatic)]
2. The Theory Externalities [10 hours]
Pareto Optimality - Market Failures, Types of Public Goods and Externalities – Coase Theorem – Property Rights – Production and Management of Common Pool/Property Resources.
3. Market and Non-Market based Approach to Environmental Issues [15 hours]
Environmental instruments – Moral suasion, property rights and liability laws - Command and Control – (Direct regulations such as effluent & technology standard with enforcement) - Market based- Pigovian Tax - Emission taxes, subsidies and tradable permits- Quotas – Environmental Policy [Environmental pollution (air, water, soil, marine, noise, thermal, nuclear)]
4. Environmental Valuation [15 hours]
Values of Environment and Ecosystem- Use Value- Direct Use Value & Indirect Use Value - Option & Quasi-option value-Non-Use Value and Existence value (These values could be categorized as Provisioning, Regulating, Habitat and Cultural & Amenities)- Importance of Valuation – Total Economic Valuation Framework - Methods of Valuation – Revealed and Stated Preference Method – Contingent Valuation Method, Hedonic Pricing Method, Travel Cost Approach, Benefit Transfer Approach, Avoided Cost Method.
5. Global Environmental Issues [5 hours]
Trans-boundary Environmental and Ecological Problems – Air Pollution – Water Pollution and Conflict – Forest – Fisheries – Climate Change and Global Warming – Trade and Environment

6. Social Issues and the Environment [5 hours]
Urban problems; Resettlement and rehabilitation; environmental ethics; evolution of environmental laws; institutions.

Core Texts:

1. Bromley, D. W. (Ed.), "Handbook of Environmental Economics", Blackwell, 1995.
2. Dasgupta, P. S. and Maler, K. G. (Ed.), "Environment and Emerging Development Issues", Cambridge University Press, 1997.
3. IPCC, "Climate Change 2014: Synthesis Report", IPCC, 2014.
4. Kolstad, C. D., "Intermediate Environmental Economics", Oxford University Press, 2010.
5. Stern, N., "The Economics of Climate Change: The Stern Review", CUP, 1st Edition, 2007.

Additional Readings:

6. Common, M., "Environmental and Resource Economics: An Introduction", Longman Group UK Limited, 319 pp, 1988.
7. Mitchell, R. C. and Carson, R. T., "Using Survey to Value Public Goods: The Contingent Valuation Method", Resource for the Future, 1989.
8. Sankar, U. (Ed.), "Environmental Economics", Oxford University Press, 469 pp, 2001.
9. Conrad, J. M. and Clark, C. W., "Natural Resource Economics: Notes and Problems", CUP, 1987.
10. Husain, A., "Principles of Environmental Economics and Sustainability: An Integrated Economic and Ecological Approach", Routledge, 3rd Edition, 2012.
11. Field, B. and Field, M. K., "Environmental Economics: An Introduction", McGraw Hill Education, 6th Edition, 2013.
12. Costanza, R., Cumberland, J. H., Daly, H. E., Goodland, R., Norgaard, R. B., Kubiszewski, I. and Franco, C., "An Introduction to Ecological Economics", CRC Press, 2nd Edition, 2014.
13. Baumol, W. J. and Oats, W. E., "The Theory of Environmental Policy", CUP, Re-Print, 1988.

UGE101 - Business Law and Economic Legislation

Course Description: This course intends to acquaint the students to the arena of Business and Economic Law which has is attached through an umbilical cord with Economics. While the students have understood the different tenets of Economics, when applied in daily lives, they need to be regulated. This gives birth to Business and Economic Law which entails the entire gamut of laws governing commercial transactions and resulting breaches. The course attempts to give an overview of the laws governing business activities in India while drawing constant connections with Economics learnt by the students throughout the five semesters of the undergraduate programme.

Modules:

1. Introduction [12 hours]
 - a. Introduction to Business and Economic Law: General principles governing business and economic enterprises. Need for regulating business. Significance of business in Economics. Overall policy followed for business. Laws governing business - Overview.
 - b. Business Vehicles operating in India: Forms of business vehicles: Sole Proprietorship, Hindu Undivided Family, Partnership firms, Limited Liability Partnerships. Corporations: Statutory corporations, Private companies, Public Companies-Listed, unlisted, one person company
 - c. Law governing Contracts in India
 - i. Basic principles of the law of contracts
 - ii. Essentials of a Contract: Parties, Promise, consideration, communication etc.
 - iii. Performance and discharge of a contract
 - iv. Breach of Contract: Causes for breach, Remedies for Breach (Damages, specific performance etc.)
2. Corporate Law and Governance [18 hours]
 - a. Regulation of Companies under the Companies Act, 1956 and Companies Act, 2013. Incorporation of Companies. Raising of finance by companies (Private Corporations and Public Corporations). Management of a company: Overview. How companies are dissolved.
 - b. Governance of a Company (legal aspect only): Ethical Aspects (Overview of Corporate Governance, Introduction to stakeholders of a company), Corporate Social Responsibility (Case Studies: Live Cases and Past Cases)
3. Contemporary Trends in Business Law [14 hours]
 - a. Securities Law: Significance of raising finance by corporations (from the perspective of impact on market, GDP, economy). Securities Frauds: Case studies-adverse effect on the economy and need for checks and balance (insider trading, speculation etc.)
 - b. Competition Law: How Competition Law has an overarching effect on the entire economy? Why Competition Law w.r.t: Regulation of market, consumer protection (reference to the Consumer Protection Act) and business.

Justification for Repeal of MRTP Act and Overview of Competition Law: Cartels-impact on economy and need for checks, Abuse of dominant position, Checks on mergers and amalgamation of companies

- c. Intellectual Property Rights: Concept of Intellectual Property Rights (IPR): How different from the traditional concept of 'property', Overview of Copyright, Trademark and Patent Law, Geographical indication, Design etc in India.
- d. Investment Law: Need for receiving investment from foreign countries, Methods of receiving investment (Regulation of FEMA on such methods), Rationale for investment not flowing freely in and out of the country (RBI, FEMA, FDI policy etc.)
- e. Taxation Law: Introduction to GST and its implications

4. Labour and Employment Law [6 hours]

- a. Labour as a factor of production: Social welfare regulations governing labour law in India including Minimum Wages Act, Maternity Benefit Act, Factories Act, Workmen Competition Act, Employers Provident Fund Act, etc.)
- b. Difference Between Workmen and Employees
- c. Resolution of Disputes: Industrial Disputes Act, Trade Unions Act, ADR Mechanisms

5. Law Relating to Money and Economic Offenses [10 hours]

- a. Law Relating to Money and Credit
 - i. Overview of Banking System as governed by Banking Regulations Act
 - ii. Regulation of circulation of money in and to/from outside India
 - iii. Evolution of NBFCs and NBNFCs in India: Regulation in India (BR Act and various notifications of RBI)
 - iv. Rise of Non-Performing Assets: Problems in law and its enforcement, introduction to SARFAESI Act and problem therein
- b. Economic Offenses in India: Economic offense, Criminal liability of companies-usage of case studies, Money laundering and allied offenses, Corruption-adverse effect on the economy, Prevention of Corruption Act, Offenses w.r.t e-commerce-Identity Theft, Internet Fraud (IT Act-reference)

Core Texts:

1. Pollock and Mulla, "Indian Contract and Specific Relief Act", Lexis Nexis, 14th edition, 2013.
2. Furmston, M., "Cheshire, Fifoot & Furmston's Law of Contract", OUP, 15th edition, 201.
3. Ramaiya, A., "Guide to the Companies Act", LexisNexis, 18th edition, 2016.
4. Tannan, M. L., "Banking law and practice in India", Butterworth, 23rd edition, 2010.
5. Trehan, J., "Crime and Money Laundering: The Indian perspective", Kluwer Law International, 2004.

UGE102 - Social Economics

[Draft outline]

Course Description: Social economics can be thought of as a perspective, rather than a discipline by itself. O'Boyle cites Elliott's work when he says that "social economics is holistic, normative, and historical as opposed to mainstream economics which is individualist, positivist, and ahistorical" (O'Boyle in *Teaching the Social Economics Way of Thinking: Selected Papers from the Ninth World Congress of Social Economics*).

1. Subjective measures of wellbeing, and macroeconomic variables

Creation of preferences, inadequacies of the concept of GDP, maintaining a focus on real variables, Inflation, unemployment, GDP and Migration

2. Ethical considerations in research

Sample data that is representative of the population, interpretation that does justice to the facts on the ground, techniques to be used

3. Policy

Implicit costs of policy decisions, responsibilities of a welfare state, cooperation and trust, externalities, welfare economics, optimal taxation, consequences of unemployment, differentiated effects of inflation on different population categories, inflation-unemployment trade-off

Other topics may be added where the normative, ethical, and historical perspectives are given due importance. These perspectives employed in this course may also be touched upon in several other courses: Microeconomics, Macroeconomics, Statistics, Economics of Growth and Development; Environmental Economics; Behavioural Economics, Public Economics; Social and Economic Thoughts of Dr Ambedkar, Economic History; Research Methodology; Ethics and Economics; History of Economic Thought; Law and Economics; Gender and Economics; Agricultural Economics; Trade and Development; Labour Economics; Entrepreneurship Development.

UGE103 - Application of Relational Data Base Management System-Structure Query Language in Economics Analysis

Course Description: This course will lay a strong foundation for the basic principles, theory and practice of using relational databases, so that the various uses of databases in applications development can be exploited. Students will apply specific SQL statements on relational tables, and appreciate issues of database security.

Modules:

1. Basic concepts [15 hours]
 - Database Management System - File based system - Advantages of DBMS over file based system - Database Approach
 - Logical DBMS Architecture - Three level architecture - Need for three level architecture
 - Database Administrator (DBA) Functions & Role - Data files indices and Data Dictionary - Types of Database.
 - Relational and ER Models: Data Models - Relational Model – Domains –
 - Tuple and Relation - Super keys - Candidate keys - Primary keys and foreign key for the Relations - Relational Constraints - Domain Constraint - Key Constraint - Integrity Constraint –
 - Update Operations and Dealing with Constraint Violations - Relational Operations - Entity Relationship (ER) Model – Entities – Attributes – Relationships - More about Entities and Relationships –
 - Defining Relationship for College Database - E-R Diagram - Conversion of E-R Diagram to Relational Database.
2. Database Integrity and Normalisation [15 hours]
 - Relational Database Integrity - The Keys - Referential Integrity - Entity Integrity
 - Redundancy and Associated Problems – Single Valued Dependencies
 - Normalisation - Rules of Data Normalisation - The First Normal Form -The Second Normal Form - The Third Normal Form - Boyce Codd Normal Form
 - Attribute Preservation - Lossless-join Decomposition - Dependency Preservation.
 - File Organisation : Physical Database Design Issues - Storage of Database on Hard Disks
 - File types - Heap files (Unordered files) - Sequential File Organisation - Indexed (Indexed Sequential)
 - File Organisation - Hashed File Organisation - Types of Indexes - Index and Tree Structure - Multi-key File Organisation – Need for Multiple Access Paths - Multi-list File Organisation - Inverted File Organisation.
3. Structures Query Language (SQL) [10 hours]
 - SQL commands - Data Definition Language - Data Manipulation Language - Data Control Language - Transaction Control Language
 - Queries using Order by - Where - Group by - Nested Queries

- Joins - Views - Sequences
- Indexes and Synonyms - Table Handling.

Laboratory: SQL Queries Based On Various Commands.

[20 hours]

Core Texts:

1. Database System Concepts: Silberschatz, Korth & Sudarshan, McGraw Hill.
2. Modern Database Management: J.A.Hoffer,V.Rames &H.Topi, Pearson
3. Oracle Database: A Beginner's Guide: I.Abramson, McGraw Hill.
4. Getting Started with SQL Paperback – by Thomas Nield (Author)

Additional Readings:

5. Database Systems: R.Elmasri & S.B. Navathe, Pearson.;
6. Introduction to Database Management System: ISRD Group, McGraw Hill.;
7. Database Management System: R.Ramakrishnan & J.Gehrke, McGraw Hill.;
8. Simplified Approach to DBMS: Parteek Bhaia, Kalyani Publishers.
9. Database Management System: Nirupma Pathak, Himalaya.
10. Database Management Systems: Pannerselvam, PHI.
11. Relational Database Management System: Srivastava & Srivastava, New Age
12. MySQL Spoken Tutorials by IIT Bombay.

UGE104 - Operational Research

Course Description: This course is about optimization techniques using mathematical, computational and communication skills. Students will learn networking, inventory, queuing, decision and replacement models and current trends in Operations Research. Student will be able to apply the techniques learnt in a wide range of industrial optimization problems.

Modules:

1. Basics of Operational Research [18 hours]
Origin & Development of Operational Research, Definition and Meaning of Operational Research, Different Phases of an Operational Research Study, Scope and Limitations of Operational Research, Mathematical Modelling of real life problems. Product Mix, Diet problem, Portfolio optimisation, Advertisement budget allocation, routing of trucks. Infeasible solutions. Linear Models Introduction to Operations Research – Linear Programming - Mathematical Formulation – Graphical method – Simplex method – Duality – Two – Phase Simplex method, simplex method, sensitivity analysis. Assumptions of Linear programming. Variants of Linear Programming- Integer programming and Goal programming.
2. Transportation Problem [10 hours]
Northwest Corner method – Vogel’s Approximation method – MODI method – Assignment problems – Applications.
3. Sequencing and Networks Sequencing [10 hours]
Problem with N jobs and 2 machines - 3 machines and ‘M’ machines. Network models – Basic Concepts – Construction of Networks – Project Network – CPM and PERT - Critical Path Scheduling – Crashing of Network.
4. Inventory Models [10 hours]
Various Costs and Concepts–EOQ–Deterministic inventory models – Production models – Stochastic Inventory models – Buffer stock.
5. Queuing Models [10 hours]
Poisson arrivals and Exponential service times – Single channel models and Multi channel models. Queueing based on infinite and finite population.
6. Decision Models [12 hours]
Game theory – Two person zero sum game – Graphic solution - Property of dominance – Algebraic solution, saddle point, non-zero sum game, Nash Equilibrium. Replacement models – Items that deteriorate with time - When money value changes – Items that fail completely – Individual replacement and Group replacement. Markov Chain models, estimation using Minimisation of Absolute Deviation(MAD) framework.

Practical: of the above 60 hours, 20 hours will be in the laboratory. Manual calculations of the various techniques supplemented with applications in the use of software like MS solver, LP Solve IDE and R.

Project work

Core Texts:

1. Kanti Swarup, Gupta P.K., and Manmohan, (2001), Operations Research, S.Chand & sons.
2. Hira and Gupta, (2001), Operations Research, S. Chand & Sons.
3. Panneerselvan. R. (2006), Operation Research, Prentice Hall of India Pvt Ltd
3. G. Hadley: Linear Programming. Narosa, Reprint, 2002.
4. Hamdy A. Taha: Operations Research-An Introduction, Prentice Hall, 9th Edition, 2010.
5. A. Ravindran, D. T. Phillips and James J. Solberg: Operations Research- Principles and Practice, John Wiley & Sons, 2005.
6. F.S. Hillier. G.J. Lieberman: Introduction to Operations Research- Concepts and Cases, 9th Edition, Tata Mc-Graw Hill, 2010.

UDE204 - History of Economic Thought

Course Description: This course is meant to create an understanding that the development of economic theory is the progress of ideas and debates, and an awareness of the relation of economics to other social science disciplines.

Modules:

1. Introduction [10 hours]
Why is a study of the history of economic thought needed; Pre-Classical thinkers – Aristotle and Kautilya from ancient times; Mercantilists, Physiocrats
2. Classical Thinkers [16 hours]
Adam Smith, David Ricardo, Thomas Malthus, Jeremy Bentham, Jean-Baptiste Say, John Stuart Mill.
3. Socialist Thinkers [8 hours]
Fabian Socialists' break from the dominant ideology; Karl Marx and his legacy
4. Neo-Classical Thinkers [12 hours]
Stanley Jevons, Carl Menger, Eugen von Bohm-Bawerk, Francis Edgeworth, Alfred Marshall, Vilfredo Pareto
5. Twentieth Century Economic Thought [14 hours]
John Maynard Keynes; Joseph Schumpeter; Frederick von Hayek; Milton Friedman; John Rawls; Kenneth Arrow; Amartya Sen; New Keynesian and Post Keynesian thought.

Core Texts:

1. Heilbroner, R., "The Worldly Philosophers: The Lives, Times and Ideas of the Great Economic Thinkers". Simon and Schuster, 1999.
2. Smith, A., "The Causes and Nature of the Wealth of Nations", RHUS, Annotated Edition, 2003.
3. Sen, A., "Development as Freedom", Oxford University Press, 2000.
4. Brue, S., & Grant, R., "The Evolution of Economic Thought", Cengage Learning, 2012.
5. Shyamasastri's Kautilya's Arthashastra

UGE201 - Natural Resource Economics

Course Description: The course provides an understanding of the linkage between environment and natural resources both for exhaustible and renewable resources. The students will also be acquainted with the problems associated with the exploitation of Natural Resources under Environmental Resource Economics framework.

Modules:

1. Basic Concepts [15 hours]
What is Resource Economics? Basic Concepts used in Resource Economics – Resource Economics, Ecological Economics & Environmental Economics Setting of a Resource Economics Problem – Time & Resources – Natural Resources – Type & Classification of Natural Resources – Renewable & Non-Renewable – Resource Scarcity – Distinctive Features of Environmental and Natural Resources – Capital Theoretic Approach to Economics of Natural Resources – Material Balance Approach of Resource and Environmental Analysis.
2. Resource Classifications [20 hours]
Economics of Exhaustible Resources: Dimensions of Resource Scarcity – Physical and Economic Measures – Theories of Exhaustible Resources – A Simple Model of Optimal Depletion– Optimal Extraction & Harvest – Non-Renewable Resources.
3. Management of Resources [25 hours]
 - a. Exhaustible Resource Management: Conditions and Principles – User Cost – The Fundamental Principle – Hotelling's Rule – The Inverse Demand Curve – Backstop Substitute – Extraction and Price Paths – Exploration and Technological Progress – Resource Extraction and Environment Cost.
 - b. Renewable Resource Problems and Management: The Economics of Fisheries, Forestry and Ground Water – Cases of Resource Use and Misuse – The Economics of Fisheries – Fishery Production Functions – The Economics of Forestry – Historical and Contemporary Institutional Arrangement Pertaining to Fishery, Forestry & Water.
 - c. CPR Management Issues: Concepts – CPR Use and Misuse – Over Utilization, Degradation of CPR – Free Rider– Tragedy of Commons – Common Property Management – Institutional Issues – Failure of Open Access Management – Institutional Framework – Community Participation and Management of Resources – Collective and Community Management – Causes of Externalities – Market Failures – Common Property Rights.

References:

1. Baland, J.M. and Plateau J.P., "Halting Degradation of Natural Resources: Is There a Role for Rural Communities", Oxford University Press, 1994.
2. Bromley, D. W., "Handbook of Environmental Economics. (ed.), Oxford: Blackwell, 379–404, 1995.

3. Common, M., "Environmental and Resource Economics: *An Introduction*", Longman Group, UK Limited, London, 319 pp., 1988.
4. Conrad, J. M., Resource Economics, Cambridge University Press, New York, 214 PP., 1999.
5. Conrad, J. M. and Clark, C. W. "Natural Resource Economics: Notes and Problems", Cambridge University Press, New York, 231 PP, 1987.
6. Dasgupta, P and Heal G. M. "Economic Theory and Exhaustible Resources". Cambridge: Cambridge University Press, 1979.
7. Fisher, A. C. "Resource and Environmental Economics", Cambridge University Press, 1981.
8. Kolstad, C.D. "Environmental Economics", Oxford University Press, 1999.
9. Ostrom, E. "Governing the Commons: The Evaluation of Institutions for Collective Actions", Cambridge University Press, 1990.
10. Pearce, D. W., and Turner R. K. "Economics of Natural Resources and the *Environment*", Harvester Wheatsheaf, 1990.
11. Perman, R., Ma, Y., Common, M., Maddison, D., and McGilvray, J. "Natural Resource and Environmental Economics" Pearson Education, Harlow, 4rd edition, 2011.