BScEconomics

Course Structure and Syllabus

July 2022

Preamble

BSc Economics program

Dr. B. R. Ambedkar School of Economics University, Bengaluru (BASE University) aims to be globally recognized as an institute of excellence in the field of Economics and allied academic disciplines. BASE University offers a five year integrated MSc Economics program and a 2-year MSc Economics program for candidates who are well motivated and seek an in depth understanding in various subjects in the domain of Economics. The students who join the five year integrated MSc Economics program have the option to graduate from the program after 3 years and they will be awarded BSc. Economics degree or complete the 5 years to obtain the Integrated MSc Economics degree. This course structure is specifically meant for the first three years of the Integrated MSc Economics. The course structure and syllabus for the 4th year and 5th year is the same as the 2 year MSc Economics program.

The University has a quantitative and applied focus and the courses offered are formed accordingly. The curriculum for the pro`grams is designed to nurture and train students in a field of growing importance by specializing in corporate, academia, analytics and public policy. Additionally, the applied nature of the courses and the inclusion of the recent developments add more value to the curriculum. The courses give hands-on training to enable students to facilitate the flow of new thoughts in economics. The skills acquired through these taught and practical courses will impart a well-rounded advanced education to BASE University graduates who will be industry-ready by the end of the programme.

Course Structure:

A student taking up this program will study fifteen core Economics courses, six quantity techniques core courses, five Skill Enhancing core courses and six ability enhancing core courses. Further, students have the freedom to choose elective subjects starting from the fourth semester. Apart from the subjects listed here, students can also take up electives offered by UGC Supported MOOCs (Massive Online Open Courses) offered in the SWAYAM portal which is approved by the University as an eligible elective.

Choice Based Credit System (CBCS)

The B.Sc. Economics programme is aligned with Choice Based Credit System (CBCS). The required credit requirements are presented in the subsequent section. The course structure presented here provide a broad framework of the programme. The final discretion on the topics to be covered within each course rests with the concerned faculty. Further, the number of hours for each module, the additional reference material shall be decided by the concerned faculty. The academic regulations provide more insights into the course structure and CBCS.

Learning Outcomes-based approach:

This programme follows the Learning Outcomes-based approach following the UGC guidelines. In line with the broader objective of the program, the application of various theories and methodology discussed in the curriculum will facilitate students to examine the economics problems in a systematic way. Given the option of choosing elective subjects of their choice, students can focus on areas of their interest that will help them to shape a career.

Qualification:

Upon successfully completing the programme, a student will be awarded the degree of B.Sc. Economics

Course Outline
5 year- Integrated MSc Economics (NEP based 2022-23)

Sem	Discipline Core (Credits: L+T+P)	Discipline Elective/ Open Elective (Credits) (L+T+P)	Ability Enhancement Core Courses, Languages (Credits: L+T+P)		Skill Enhancement Courses			Total Credits
					Skill based	Value based		
					(Credits: L+T+P)			
I	MicroeconomicsI (4) Mathematics for EconomicsI (4) Statistics for EconomicsI (4)	Open Elective*(3)	EnglishI (3) Indian Language I (3)		Digital Fluency (2)	Physical Education - Yoga (1) (0+0+2)	Health & Wellness (1) (0+0+2)	25
II	Macroeconomics I (4) Mathematics for EconomicsII (4) Statistics for EconomicsII (4)	Open Elective *(3)	English II (3) Indian LanguageII (3)	Environmental Studies (2)		Physical Education- Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Certificate in Economics							Minimum credits	**50**
III	Microeconomics II (4) Macroeconomics II (4) EconometricsI(4)	Open Elective* (3)	Foreign Language I (3) English III(3)		Computer Laboratory/ Cyber Security (2)	Physical Education- Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
IV	Econometrics II (4) Indian Economy (4) Economics of Growth and Development (4)	Open Elective* (3)	Foreign Language II (3) English IV (3)	Constitution of India (2)		Physical Education- Sports (1)(0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
*Psychology/Sociology/ Philosophy / Accounts / Logic / Approved MOOCs								
Diploma in Economics							Minimum credits	**100**

V	Financial Economics (4) Behavioral Economics (4) Social and Economic Thoughts of Dr B.R. Ambedkar (4)	Elective(3) Introduction to R &Python(3)		Financial Literacy(2)	Artificial Intelligence(2)	Physical Education- Sports (1)(0+0+2)	NCC/NSS/R &R(S&G)/ Cultural (1)(0+0+2)	24
VI	Public Economics (4) International Economics (4) Environmental Economics (4)	Elective (3) Economics Laboratory(3) Internship (2)			Professional Communicati on (2)	Physical Education - Sports (1) (0+0+2)	NCC/NSS/R &R(S&G)/ Cultural (1) (0+0+2)	24
	BSc Economics						Minimum credits	**148**
VII	Advanced Microeconomics (4) Quantitative Techniques in Economics (4) Advanced Econometrics (4)	Elective(3) Research Methodology(3) Advanced Programming (3)						21
VIII	Advanced Macroeconomics (4) History of Economic Thought (4)	Elective(3) Vocational (3) Research Project or 2 Electives (6)						20
	BSc Honours Economics						Minimum credits	**189**
IX	Public Economics(4) Indian Economy- Post reforms (4)	3 Electives (9) Vocational (3)						20
X	Game Theory (4) International Trade and Finance(4)	Elective(3) Vocational (3) Research Project or 2 Electives (6)						20
	MSc Economics						Minimum credits	**229**

*Credits given in the parenthesis

I. Core Economics Courses

No.	Course Code		Credits	Semester
1	UE1401	Microeconomics- I	4	I
2	UE2401	Macroeconomics- I	4	II
3	UE3401	Microeconomics-II	4	III
4	UE3402	Macroeconomics-II	4	III
5	UE4401	Indian Economy	4	IV
6	UE4402	Economics of Growth and Development	4	IV
7	UE5401	Financial Economics	4	V
8	UE5402	Behavioural Economics	4	V
9	UE5403	Social and Economic Thoughts of Dr B R Ambedkar	4	V
10	UE6401	Public Economics	4	VI
11	UE6402	International Economics	4	VI
12	UE6403	Environmental Economics	4	VI

II. Quantitative Techniques Core Courses

No.	Course Code	Course Name	Credits	Semester
1	UQ1401	Mathematics for Economics- I	4	I
2	UQ1402	Statistics for Economics- I	4	I
3	UQ2401	Mathematics for Economics- II	4	II
4	UQ2402	Statistics for Economics- II	4	II
5	UQ3401	Econometrics- I	4	III
6	UQ4401	Econometrics- II	4	IV

III. Skill Enhancing Core Courses

No.	Course Code	Name of the Subject	Credits	Semester
1	US1201	Digital Fluency	2	I
2	US3201	Computer Laboratory	2	III
4	US5201	Artificial Intelligence	2	V
5	US6201	Internship	2	VI
6	US6202	Professional Communication	2	VI

IV. Ability Enhancing Core Courses

SL. NO.	Course code	Name of the Subject	Credits	Semester
1	UA1301	English I	3	I
2	UA1302	Indian Language-Kannada I	3	I
3	UA1303	Indian Language-Hindi I	3	I
4	UA1304	Indian Language-Basics of Kannada and Hindi I	3	I
5	UA2301	English II	3	II
6	UA2302	Indian Language-Kannada II	3	II
7	UA2303	Indian Language-Hindi II	3	II
8	UA2304	Indian Language-Basics of Kannada and Hindi II	3	II
9	UA2205	Environmental Studies	2	II
10	UA3301	English III	3	III
11	UA3302	Foreign Language-German I	3	III
12	UA3303	Foreign Language- French I	3	III
13	UA4301	English IV		IV
14	UA4302	Foreign Language-German II	3	IV
15	UA4303	Foreign Language-French II	3	IV
16	UA4204	Constitution of India	2	IV
17	UA5201	Financial Literacy	2	V

V. Value based

SL. NO.	Course code	Name of the Subject	Credits	Semester
1	UV1101	Physical Education- Yoga	1	I
2	UV1102	Health & Wellness	1	I
3	UV2101	Physical Education-Sports I	1	II
4	UV2102	NCC/NSS/R&R(S&G)/Cultural I	1	II
5	UV3101	Physical Education-Sports II	1	III
6	UV3102	NCC/NSS/R&R(S&G)/Cultural II	1	III
7	UV4101	Physical Education-Sports III	1	IV
8	UV4102	NCC/NSS/R&R(S&G)/Cultural III	1	IV
9	UV5101	Physical Education-Sports IV	1	V
10	UV5102	NCC/NSS/R&R(S&G)/Cultural IV	1	V
11	UV6101	Physical Education-Sports V	1	VI
12	UV6102	NCC/NSS/R&R(S&G)/Cultural V	1	VI

VI. Elective Courses

SL. NO.	Course code	Name of the Subject	Credits	Semester
1	UD1301	Trade, Globalisation and Development	3	ODD Semesters
2	UD1302	Money, Banking and Finance	3	
3	UD1303	Political Economy of India	3	
4	UD1304	Industrial Economics	3	
5	UD1305	Business Law and Economic Legislation	3	
6	UD1306	Economics of Discrimination	3	
7	UD1307	Economic History of India Pre-1947	3	
8	UD1308	Economic History	3	
9	UD1309	Indian Financial System		
10	UG1301	Operational Research	3	
11	UG1302	Application of Relational Data Base Management System-SQL in Economics Analysis	3	
11	UD2301	Open Economy Macroeconomics	3	EVEN Semesters
12	UD2303	Experimental Economics	3	
13	UD2304	Managerial Economics	3	
14	UD2305	Labour Economics	3	
15	UD2306	Gender and Economics	3	
16	UD2307	Introduction to Agricultural Economics	3	
17	UD2308	Informal Economy	3	
18	UD2309	Corporate Finance	3	
19	UG2301	Resource Economics	3	
20	UG2302	Introduction to Data Science	3	
21	UG2303	Entrepreneurship Development	3	

VII. Open Electives*

SL. NO.	Course code	Name of the Subject	Credits	Semester
1	UO1301	Psychology	3	**Odd semesters**
2	UO1302	Sociology	3	
3	UO2301	Introduction to financial accounting	3	**Even semesters**
4	UO2302	Introduction to Philosophy	3	

*Courses to be specified at before each semester

VII. Vocational Electives

SL. NO.	Course code	Name of the Subject	Credits	Semester
1	UVO5301	Introduction to R and Python	3	V
2	UVO6301	Economics Laboratory	3	VI

Microeconomics I

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 by using appropriate mathematical structures. Mathematical Economics I and II will provide additional perspectives for these topics essential to a complete appreciation of these concepts and their applications.

Learning outcomes:

1. Students demonstrate an understanding of the basic economic principles and their application.

2. They have a thorough understanding of fundamental microeconomic concepts such as utility, demand and supply, consumer and producer decisions, market structure etc.

3. Students can identify the market type, nature of demand, determinants of production and supply, etc. for any good or service.

Modules

1. Introductory topics

Nature and scope of economics – opportunity cost, scarcity, production possibility frontier; Market system as a way to organize economic activities, welfare state; Microeconomics-vs.-macroeconomics; Mankiw's ten principles of economics.

2. Mechanics of price determination

Demand and Supply - schedules, functions, curves; Law of demand and exceptions; Law of supply and exceptions; market equilibrium; movement along and shifts in demand and supply curves and changing market equilibrium; Consumer and producer surplus; Price, income and cross-price elasticities; relation between price elasticity and total revenue.

3. Consumer theory

Cardinal and ordinal measures of utility, utility function, total utility, marginal utility, law of diminishing marginal utility, water-diamond paradox; Indifference curves: indifference schedule, marginal rate of substitution, budget constraint, consumer's equilibrium, comparative statics; utility maximization and choice - Samuelson's revealed preference theory with axioms; deriving the individual demand curve; Slutsky equation, Hicksian demand curve and compensated demand.

4. Producer theory

Production function: technology and behaviour of total, marginal, and average products; law of diminishing marginal product, laws of returns to scale; isoquants and isocost lines, producers' equilibrium; 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; production with two variable inputs; Expansion Path; Profit Maximization, Cost Minimization.

5. Market Structure

Perfect competition: Assumptions – Short-Run and Long-Run Equilibrium of a Firm – Short-Run Supply Curve of the Firm – Industry's Long-Run Supply Curve.

Monopoly: Monopoly market equilibrium; price discrimination (first, second, third degree, intertemporal and peak load pricing, two part tariff) — measuring monopoly power – sources of monopoly – associated social costs.

Monopolistic competition – market equilibrium; Oligopoly - Cournot, Bertrand, Stackelberg, Output Decision, using game theoretical frameworks.

Core texts:

1. Pindyck, R. S. and Rubinfeld D. L., "Microeconomics", Pearson Edu Inc. 8th Ed 2013

2. Varian, H. R., "Intermediate Microeconomics: A Modern Approach"

3.Nicholson, W., & Snyder, C. M. (2012). *Microeconomic theory: Basic principles and extensions*. Cengage Learning.

Additional readings:

5. Mankiw, G. N., "Principles of Microeconomics", Cengage Learning India Pvt Ltd, 7th ed2015 Company, 8th Edition, 2016

6. Koutsoyiannis, A., "Modern Microeconomics", Palgrave Macmillan, 2nd Edition, 2003

5. Henderson J and Quandt R. "Microeconomic Theory"

7. CORE-Econ (https://www.core-econ.org/)

Mathematical Economics I

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.

Learning outcomes:

1. Understanding of the mathematical concepts and methods used by professional economists.
2. Ability to express economic ideas in the language of mathematics.
3. Use of differentials and matrix algebra techniques in economic analysis.
4. Analyze economic models by using formal mathematical methods.

Modules

1. Preliminaries

Nature and scope of mathematical economics- Sets: Set Types, Operations, Venn Diagram, De Morgan's Law, Cartesian Product, Set Relations: Reflexive, Symmetric, Transitive and Equivalence Relations, Applications: Preference relations.

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- time value of money (Interest compounding, Discounting).

Some applications in economics: Demand, supply, equilibrium, production functions, Law of diminishing marginal returns, cost functions, consumption function, investment function, equilibrium national income.

2. Matrices

Vector spaces: algebraic and geometric properties, scalar products, norms, orthogonality; linear transformations: properties, matrix representations and Elementary 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 Economics: Input-Output relationships, systems of equations.

3. Univariate Calculus and Optimization

Limits and Continuity of Functions, Economic Applications of Continuous and Discontinuous functions- Definition of Derivative and Differential, Rules of differentiation, Higher order derivatives, Increasing and Decreasing functions, Concavity and Convexity of a Function, Inflection points- - Marginal Concepts- Relationship among Total, Marginal and Average Concepts- Optimization of Functions of One Variable and Successive-Derivative test for Optimization.

Differentiation of Exponential and Logarithmic Functions-Rules of differentiation, Higher-Order Derivatives-Logarithmic differentiation.

Core texts:

1. Chiang A. C, Kevin Wainwright (2005), Fundamental Methods of Mathematical Economics, McGraw Hill, ND.
2. Sydsaeter, K and Hammond, P., Mathematics for Economic Analysis, Pearson Educational Asia, 4th Edition, 2002.
3. Dowling, E. T., "Introduction to Mathematical Economics", McGraw-Hill, 3rd Edition, 2001.
4. Bingham, R. C. (1972). Economics, Mathematically Speaking. McGraw-Hill.

Additional readings:

5. Allen R.G.D (1967), Mathematical Analysis for Economists, Macmillian.
6. Hoy, M., Livernois, J. McKenna, C., Rees, R. and Stengos, T., "Mathematics for Economics", MIT Press, 3rd Edition, 2011
7. Rosser, Mike (2009), Basic Mathematics for Economists, Routledge, Taylor & Francis Group
8. Yamane T.; Mathematics for Economics: An Elementary Survey, PHI Learning Private Limited, Second Edition, 2013

Statistics for Economics I

Course Description: The course familiarizes 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.

Learning outcomes:

1. Identify different types of data and summarizing using graphical techniques.
2. Summarizing variable using different measures.
3. Application of Index numbers.
4. Understanding probability and probability distributions.

Modules

1. Introduction

Scope of statistics in economics; Primary and Secondary Data; Types of Data - Point of time data, Time Series Data, Cross Section Data, Panel Data; Types of measurement: Nominal, ordinal, ratio and interval scales; Classification and Tabulation - construction of frequency distribution; - Graphical representation - leaf and stem diagram, Bar diagram, Pie chat, histogram, frequency curve and cumulative frequency curve (Ogives).

2. Descriptive Statistics

Measures of Central Tendency and Dispersion, ie., mean, median, mode, harmonic mean, geometric mean, percentiles, quartiles; Measures of Variability: Range, Standard deviation, variance; Measures of Skewness and Kurtosis Pearson, Bowley; - Moments, coefficient of variation; Bivariate Frequency Table, Cross Tabulation of data and Concurrent Deviation, Coefficient of Deviation; Computation and interpretation of Two-way Relationships; co-variance and Correlation.

3. Index Numbers

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.

4. Elements of Probability

Probability and Statistics; Permutation and combination; Random Experiment, Sample Space, Events; Axiomatic definition, finite sample space; Generalized addition theorems, Independence of two events; Conditional probability, Bayes' Theorem and applications.

5. Random Variables and Probability Distributions

Discrete & Continuous Random Variables; Probability Mass & Density functions, Distribution Functions; Mathematical Expectations, Theorems; Binomial, Poisson, Normal, Uniform, Exponential, Lognormal, Hypergeometric distributions.

Core texts:

1. Anderson, D. R., D. J. Sweeney and T. A. Williams (2017), "Statistics for Business and Economics", Cengage Learning India Pvt. Ltd., 13th Edition.

2. Freund, J. E., Miller, I., & Miller, M. (2004). John E. Freund's Mathematical Statistics: With Applications. Pearson Education India.
3. Freedman, Purves, and Pisani (2011), Statistics, Viva Norton
4. Ross, S. M. (2014). Introduction to probability models. Academic press.

Additional readings:

5. Black K (2016). Business Statistics: For Contemporary Decision Making, 9th Edition, Wiley
6. McClave, J. T., Benson, P. G., Sincich, T., &Sincich, T. (2014). Statistics for business and economics (pp. 074-0188). Boston: Pearson.
7. Lind D.A., Marchal W. G., Wathern S.A., Basic Statistics for Business & Economics, 10th ed McGraw Hill
8. Ross, S. (2014). A first course in probability. Pearson.
9. Newbold P., Carlson W. L., Thorne B M. (2013) Statistics for business and economics, 8th Ed, Pearson

Macroeconomics I

Course Description: Two core courses in macroeconomics introduce students to the fundamental concept of money in the macroeconomic system. 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 disequilibrium and to stabilize the economy. This course introduces the foundations of macroeconomics and explains the concept of national income accounting. Detailed discussion on money, classical economics and Keynesian principles forms the core part of this course

Learning outcomes:

1. Use national income statistics to describe and analyze the economy in quantitative terms.
2. Explain the role of money, credit, banking system and central bank.
3. The core economic principles of Classical and Keynesian economic thought.
4. Analyze the economy in the IS_LM framework.

Modules

1. Introduction

Core principles of Macroeconomics; Macroeconomics and Microeconomics; Circular flow diagram and networking in the macroeconomic system.

2. National Income Accounting

Methods of estimating national income – expenditure method, income received approach, production method, value added or net product method; 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. Money

Functions of money; Types of money – M1, M2, M3, M4, and M0 as per RBI classification; Creation of credit; Money multiplier; Purchasing power of money; Demand for money- Classical, Keynesian and Monetarists arguments; Supply of money and the central bank; Role of central bank; Money market equilibrium; Real vs. nominal variables; Quantity theory of money- different versions, Liquidity trap; Monetary neutrality; Inflation Concepts, kinds, causes; Measuring Inflation in India- WPI, CPI

4. Classical Macroeconomic Model

History of different schools of economic thought; Characteristics of the Classical model: Say's law of markets; Production in Classical system; Employment – Labour demand and Labour Supply functions; Determination of wage rate and level of employment; Equilibrium output and employment; Classical dichotomy and monetary neutrality; Classical theory of interest rate.

5. Keynesian Macroeconomic Model

Economic Depression of the 1930s and the Keynesian Revolution; Simple Keynesian model- Goods market- Components of aggregate demand- consumption function, investment function, government

spending, exports and imports; Aggregate Supply; Equilibrium national output in closed economy; Macroeconomic multipliers; The Keynesian Theory of the Interest Rate and theory of demand for money- money market equilibrium.

6. IS-LM model

Money and goods market equilibrium: Construction of IS, LM functions; Fiscal Policy: shifters of IS curve, Government spending effect; Monetary Policy: shifters of LM curve, money supply effect; Policy mix; Monetary and Fiscal Policy Multipliers in the IS–LM Model.

Core texts:

1. Blanchard O (2017). Macroeconomics, 7th Edition Pearson
2. Mankiw, N. (2016). Macroeconomics, 9th ed. Worth Publishers.
3. Froyen, R.T., "Macroeconomics" Theories and Policies, Pearson Education, 10th Edition, 2013

Additional readings:

4. D'Souza E., "Macroeconomics", Pearson Education, 2009
5. Abel, A., Bernanke, B. (2016). Macroeconomics, 9th ed. Pearson Education
6. Dornbusch, R., Fischer, S., Startz, R. (2018). Macroeconomics, 12th ed. McGraw-Hill
7. Williamson S.D. (2018) Macroeconomics. 6th ed Pearson
8. Krugman, P., Wells R. (2018). Macroeconomics,5th ed Macmillian

Mathematics for Economics II

Course Description: This course will introduce students to advanced mathematical techniques that are used in Economics. Uses of calculus and optimization techniques used in Economics is dealt in detail. The course also introduces students to linear programming.

Learning outcomes:

1. Ability to Solve optimization problems involving functions of single and multiple variables.
2. Solve problems involving integrals.
3. Understanding the application of Linear programming method.

Modules

1. Multivariate Calculus and Optimization

Functions of several variables and partial derivatives -Rules of Partial Differentiation-Second-order partial derivatives- -Differentials- Total and Partial Differentials- Total Derivatives-Implicit and Inverse Function rules.

Marginal Productivity, Income determination Multipliers and Comparative Statics- Income and Cross Price Elasticities of Demand- Optimization of Multivariable Functions-Unconstrained Optimization and Constrained Optimization with Lagrange Multipliers- Optimization of Cobb-Douglas and CES Production Functions-Returns to scale- Optimization of Exponential and Logarithmic Differentiation-Optimal Timing.

Special Determinants and Matrices and their Economic Applications: Jacobian Determinants-Hessian Determinants- Discriminant-Input-Output Analysis.

2. Integration and Dynamic Methods

Integration-Rules of Integration-Initial and Boundary Conditions differential equations, and difference equations.

Indefinite Integral: -Integration by substitution - Integration by parts- Applications first order difference equations, equilibrium and its stability.

Definite Integral: Area under a curve-The Definite Integral-Properties of Definite Integrals-Area between curves- Improper Integrals-L' Höpital's Rule - Consumers' and Producers' Surplus- The Definite Integral and Probability.

3. Linear programming Introduction, graphical solution, matrix formulation, duality, economic interpretation.

Core texts:

1. Chiang A. C, Kevin Wainwright (2005), Fundamental Methods of Mathematical Economics, McGraw Hill, ND.
2. Sydsaeter, K and Hammond, P., Mathematics for Economic Analysis, Pearson Educational Asia, 4th Edition, 2002.
3. Dowling, E. T., "Introduction to Mathematical Economics", McGraw-Hill, 3rd Edition, 2001.

Additional readings:
4. Bingham, R. C. (1972). Economics, Mathematically Speaking. McGraw-Hill.
5. Hoy, M., Livernois, J. McKenna, C., Rees, R. and Stengos, T., "Mathematics for Economics", MIT Press, 3rd Edition, 2011
6. Allen R.G.D (1967), Mathematical Analysis for Economists, Macmillian.
7. Rosser, Mike (2009), Basic Mathematics for Economists, Routledge, Taylor & Francis Group
8. Yamane T.; Mathematics for Economics: An Elementary Survey, PHI Learning Private Limited, Second Edition, 2013

Statistics for Economics II

Course Description: This course discusses sampling methods and introduces methods of estimation. A detailed section on hypothesis testing, interpretation of results and the various application in empirical studies is a part of the course. It also discusses relationship among the variables using correlation and regression method.

Learning outcomes:

1. Good grasp of the sampling method to be adopted for various studies.
2. Grasp of various statistical testing procedures.
3. Construct hypothesis and testing hypothesis.
4. Estimate relation between two or more variables.

Modules

1. Methods of Sampling

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

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

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 of a test; Test for Goodness of Fit - T, Chi-Square and F Distributions; Analysis of Variance-ANOVA & MANOVA.

4. Correlation and Regression

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.

Core texts:

1. Anderson, D. R., D. J. Sweeney and T. A. Williams (2017), "Statistics for Business and Economics" , Cengage Learning India Pvt. Ltd., 13th Edition.
2. Freund, J. E., Miller, I., & Miller, M. (2004). John E. Freund's Mathematical Statistics: With Applications. Pearson Education India.
3. Freedman, Purves, and Pisani (2011), Statistics, Viva Norton

4. Ross, S. M. (2014). Introduction to probability models. Academic press.

Additional readings:

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6. McClave, J. T., Benson, P. G., Sincich, T., &Sincich, T. (2014). Statistics for business and economics (pp. 074-0188). Boston: Pearson.
7. Lind D.A., Marchal W. G., Wathern S.A., Basic Statistics for Business & Economics, 10th ed McGraw Hill
8. Ross, S. (2014). A first course in probability. Pearson.
9. Newbold P., Carlson W. L., Thorne B M.(2013) Statistics for business and economics, 8th Ed, Pearson

Microeconomics II

Course Description: This course builds on the microeconomics foundations and focuses more realistic considerations like uncertainty, and on broader considerations like welfare and general equilibrium.

Learning outcomes:

1. Students apply the fundamental microeconomic concepts to real world considerations

2. Students can identify in the real world, reflections of welfare, and instances of market failures.

3. Students can identify the behaviours of economic agents in game theoretic framework.

Modules

1. Uncertainty and Consumer Behavior

Expected utility hypothesis - von Neumann-Morgenstern theorem; risk – preferences toward risk; reducing risk; demand for risky assets – bubbles; difference between risk and uncertainty; intertemporal decision-making.

2. Factor Pricing

Factor pricing in perfectly competitive markets; marginal productivity theory of input pricing; factor pricing in imperfectly competitive markets; monopsony power, unionized (collective bargaining) and ununionized workers; bilateral monopoly; theories of wages, rent, interest and profit.

3. Market failure and Government Intervention

Why markets fail; Externalities and efficiency, public goods; Asymmetric information; Price ceiling, floor; Taxes, subsidies; Tariffs, production quotas, import quotas, export quotas; Competition law; Cartels; Bundling; Predatory pricing.

4. General Equilibrium

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), equity and efficiency, gains from free trade; Walrasian general equilibrium analysis.

5. Welfare

Individual welfare and social welfare; role of value judgments in welfare economics; measurement of welfare, social welfare functions and criteria, social choice theory; Income distribution and equity; Arrow's impossibility theorem; theory of second best.

6. Game Theory

Dominant and dominated strategies, mixed strategies; Nash equilibrium; simultaneous and sequential games – appropriate game forms; one-shot and repeated games - Folks theorem; auctions.

Core texts:

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

2. Walter Nicholson and Christopher Snyder, "Microeconomic Theory" – 10th Edition, Southwestern Editors.

Additional readings:

3. Henderson, J. M., & Quandt, R. E. Microeconomic theory: A mathematical approach.

4. Pindyck, R. S. and Rubinfeld D. L., "Microeconomics", Pearson Ed Inc. 8th Ed, 2013

5. Koutsoyiannis, A., "Modern Microeconomics", Palgrave Macmillan, 2nd Edition, 2003

Macroeconomics II

Course Description: Macroeconomics aims are providing an overall picture of how the economy functions. The discussion includes open economy macroeconomics as well and more emphasis is on the policy front.

Learning outcomes:

1. Explain the functioning of labour market.
2. Construct the aggregate demand and aggregate supply model of the macro economy and explain macroeconomic problems and fiscal policy and monetary policy solutions.
3. Describe the causes and consequences of inflation and unemployment.
4. Analyze the functioning of open economy and the role of expectations.

Modules

1. Labour Market
Unemployment, types, Wage determination- effect of prices, unemployment; Price determination, Flexible price- fixed money wage model, Labor demand and supply, Natural rate of Unemployment, Employment and output.

2. Aggregate Demand and Aggregate Supply
Aggregate Supply, Aggregate Demand- Equilibrium of AD- AS and adjustments for determining output, price and employment; Effects of monetary and fiscal policy, dynamics of adjustment.

3. Unemployment and inflation
Inflation, Expected Inflation, and Unemployment; Phillips curve Natural rate of unemployment, high inflation and Phillips curve.

4. Open Economy Macroeconomics

Balance of Payments, Exchange Rate, equilibrium and disequilibrium of BoP; Short-run Open Economy: Mundell-Fleming Model; Purchasing Power Parity; Dornbusch's overshooting model.

5. Microeconomic foundations of Macroeconomics

Fisher's theory of optimal intertemporal choice; Life cycle, permanent income hypothesis; Rational expectations, Lucas critique, Random walk model; Adaptive expectations.

6. Fiscal and monetary policy

Relative effectiveness of fiscal and monetary policies: policy lag, automatic Stabilizers; Balanced budget debate; Active or passive; monetary policy objectives and targets; rules versus discretion: time consistency; Economic crisis and policy actions.

Core texts:

1. Blanchard O (2017). Macroeconomics, 7th Edition Pearson
2. Mankiw, N. (2016). Macroeconomics, 9th ed. Worth Publishers.
3. Froyen, R.T., "Macroeconomics" Theories and Policies, Pearson Education, 10th Edition, 2013

Additional readings:

4. D'Souza E., "Macroeconomics", Pearson Education, 2009

5. Abel, A., Bernanke, B. (2016). Macroeconomics, 9th ed. Pearson Education
6. Dornbusch, R., Fischer, S., Startz, R. (2018). Macroeconomics, 12th ed. McGraw-Hill
7. Williamson S.D. (2018) Macroeconomics. 6th ed Pearson
8. Krugman, P., Wells R. (2018). Macroeconomics,5th ed Macmillian
9. Jones, C. (2016). Macroeconomics, 4th ed. W. W. Norton

Semester III: Quantitative Techniques Core Courses

Econometrics I

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.

Learning Outcomes:

1. Explain core concepts and techniques in econometrics, with a special focus on the classical linear regression model.
2. Estimate and interpret linear regression models and be able to distinguish between economic and statistical importance.
3. Explain the violations of the assumptions of the classical linear regression models.
4. Able to use a statistical/econometric computer package to estimate an econometric model.

Modules

1. Introduction to Econometrics
Meaning of Econometrics, Difference between Economic and Econometric models, Methodology of Econometrics, The concept of Regression, Regression vs. Correlation, PRF and SRF, Nature and types of Data.

2. Simple Regression Model
The method of Ordinary Least Squares, Assumptions, Properties: Gauss- Markov Theorem (BLUE), Statistical Interference, Goodness of Fit of the Model- R^2, Regression through Origin, Scaling and Units of Measurement, Basic Functional forms of regression model.

3. Multiple Regression Model
Estimation using the OLS method, Assumptions, Properties, Goodness of Fit- R^2 and Adjusted R^2.

4. Relaxing the Assumptions of CLRM and Regression Diagnostics
Multicollinearity, Heteroskedasticity, Autocorrelation: Meaning, Consequences, Detection and Remedial Measures, Types of Specification error, Specification Tests, Outliers and Influential Observations.

5. 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 its interpretation, Students are expected to attempt the weekly problem sets.

Core texts:

1. Dougherty, C. "Introduction to econometrics", Oxford University Press, 4th Edition, 2011.
2. Wooldridge, J. M., "Introductory Econometrics: A Modern Approach", South-Western Cengage Learning, 7th Edition, 2019.
3. Greene, W.H., "Econometric analysis", Pearson Education India, 8th Edition, 2018.

Additional readings:

4. Pedace, R. "Econometrics for Dummies", John Wiley and Sons, 1st Edition, 2013.
5. Studenmund A. H., "Using Econometrics: A practical Guide", Pearson Education, 7th Edition, 2017
6. Gujarati, D.N., "Econometrics by example", Palgrave, 2nd Edition, 2016.

Economics of Growth and Development

Course Description: This course aims to introduce students to the theories, challenges, and policies of development economics. Specifically, this course, examines economic problems and developmental issues facing contemporary developing nations, such as issues of poverty, inequality, economic growth, population growth etc. The course also aims to analyze empirical evidence on the patterns of economic development.

Learning outcomes:

1. Basic facts of economic growth and development.
1. Understanding of different growth and development theories.
2. Measures of poverty and inequality and identify their determinants.
3. Analyze the impact of policy measures in economic growth.

Modules

1. The concept of Development and its measurement

Economic Growth and Development - Core Values of Development – Measurement of Development: National income as a measure of well-being, PQLI, HDI, GDI, Inclusive Growth, Inclusive Development Index, Inclusive growth in India, the concept of Sustainable Development, Happiness Index, Comparing Development across Nations and within India.

2. Growth Models

The Harrod – Domar Model, The Solow Model, Endogenous Growth Model- Romer, AK model; Lucas model.

3. Growth and Development Theories

Rostow's Stages of Growth, Lewis' theory of unlimited supplies of labour, Harris Todaro model, Big Push Theory of Rosenstein Rodan, Balanced Growth – Views of Nurkse and Rodan, Unbalanced Growth –Hirschman, Critical Minimum Effort theory of Leibenstein, Gandhian views on Development, Ambedkar Perspectives on Development.

4. Poverty and Inequality

Concepts of Poverty and Measurement: Absolute vs. Relative Poverty, Poverty Line, Head Count Ratio, the concept of Poverty Gap, Poverty Gap Ratio, Income Gap Ratio, Human Poverty Index, Multi-dimensional Poverty Index, Poverty trap and the Mechanism that Generate Poverty Traps, Global Poverty and Poverty in India.

Inequality and Measurement: Lorenz Curve, Gini Coefficient, Development and Inequality - Kuznet's Inverted U Hypothesis, Status of Inequality in the World.

5. Institutions and the State

Role of Institutions in Economic Growth, Democracy and Economic Development, Measurement of Institutional Quality, Role of State in economic development, Government Failure and Corruption.

Core texts:

1. Todaro M. P. and Stephen, C., Smith, "Economic Development", Pearson, 13th Edition, 2020.

2. Ray, D., "Development Economics", Princeton University Press, 2009.

3. Thirlwall A. P., "Growth and Development", Macmillan; 9th Edition, 2011.

4. Barro, R., and Sala-i-Martin .X., "Economic growth", The MIT Press, 2nd edition, 2004.

Additional readings:

5. Cypher, James M., and James L. Dietz. "The process of economic development". Routledge, 5th Edition, 2020.
6. Chenery, Hollis and T. N. Srinivasan, "Handbook of Development Economics, Elsevier, 1998.
7. Putnam, R., "Making Democracy Work: Civic Traditions in Modern Italy", Princeton University Press, 1994.
8. Sen, A., "Development as Freedom", Oxford University Press, 1999.
9. De Janvry, Alain, and Elisabeth Sadoulet. Development economics: Theory and practice. Routledge, 2015.
10. Ravallion, Martin (2016). Economics of poverty: History, measurement and policy. New York: Oxford University Press
11. Handbook of Developmental Economics Vol I, II, III, IV

<center>**Indian Economy**</center>

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.

Learning outcomes:

1. Student will have an overview of the basic characteristics of Indian economy.
2. Able to explain the growth trajectory and recent developments in the Indian economy.
3. Identify the various issues in a developed economy like India.
4. A broad understanding of the policy framework.

Modules

1. Indian Economy since Independence

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

Demographic transition in India and the demographic dividend; Trends and Issues since 1951; Education Policy; Health and Malnutrition; Human Development Index.

3. Sectoral Development

Growth; Problems and issues of Agriculture, Industry and Service Sectors of the economy; Policies towards each sector.

4. Challenges of the Economy

Poverty; Unemployment; Economic Inequality and Distributive Justice; Various Policies and Programs of the Govt since 1991.

5. Planning Experiences

Planning Commission and Five Years Plans- an overview; NITI Ayog – structure, functions, differences between Planning Commission and NITI Ayog.

6. Economic reforms

Economic reforms in the economy since 1980s; Liberalization; FDI and capital inflows; GST; Recent developments.

7. India's Foreign Trade

Trends in Exports and Imports; India's Foreign Trade Policy – an overview.

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

4. Relevant an recent journal articles and publications by Government of India, State governments, RBI etc.

Econometrics II

Course Description: This 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.

Learning outcomes:

1. Identify and use dummy variables in regression models.
2. Estimate time series, panel data regression models.
3. Ability to develop empirical models starting from assumptions, followed by estimation using appropriate models, interpret the results and test their statistical significance.
4. Able to use a statistical/econometric computer package to estimate an econometric model.

Modules

1. **Discrete Choice Models**

   Dummy independent variable, Uses of Dummy variables, Interaction Dummy, Dummy Dependent Variable, Linear Probability Model, Logit model, Probit Model, Tobit Model.

2. **Simultaneous Equation Model**

   Meaning, Nature, Simultaneous Equation Bias, Identification problem, Endogeneity, Meaning of instrumental variable and types of simultaneous equation models- Indirect Least Squares, Two Stage Least Squares.

3. **Distributed lag Models**

   Role of Lag in Economics, Meaning of Distributed Lag Models.

4. **Introduction to Time Series Analysis**

   Basic concepts of time series model: Stochastic and Deterministic processes, Stationary Process, Non-stationary process, Random Walk Process, Integrated Process, Trend Stationary and Difference Stationary Process, The concept of Unit Root, Unit root tests, Spurious Regression and Engel-Granger Co-integration method.

5. **Introduction to Panel Data Analysis**

   Meaning and nature of panel data, concept of poolability, Panel data model, Pooled OLS, Fixed Effect and Random Effect models.

6. **Practical Work (20 Hours)**

Core texts:

1. Wooldridge, J.M., "Econometric Analysis of Cross Section and Panel Data", The MIT Press, 2nd Edition, 2015.

2. Wooldridge, J. M., "Introductory Econometrics: A Modern Approach", South-Western Cengage Learning, 7th Edition, 2019.

3. Greene, W.H., "Econometric analysis", Pearson Education India, 8th Edition, 2018.

4. Walter Enders (2015), Applied Econometric Time Series, 4th Edition, Wiley.

5. Kerry Patterson (2000), An Introduction to Applied Econometrics, Palgrave Macmillan.

Additional readings:

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

7. Koutsoyiannis, A., "Theory of Econometrics", Pal Ex Publishing, 2nd Edition, 2015.

8. Brooks, C. (2019). Introductory econometrics for finance. Cambridge university press.

9. Johnston, J. DiNardo D (1997). Econometric methods 4th ed

10. Long, J. S., & Long, J. S. (1997). Regression models for categorical and limited dependent variables (Vol. 7). Sage.

Financial Economics

Course Description: 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.

Learning outcomes:

1. Apply knowledge of economics and quantitative methods in the domain of Finance.
2. Explain and analyze the accounting statements by the firms.
3. Understand the role played by time and uncertainty in evaluating financial instruments.
4. Comprehend how security prices are determined using various asset pricing models.

Modules

1. Basic Accounting

Recording transactions, Types of accounts, Rules of accounting, Journals; ledger accounts; Balance sheet, Profit and Loss statement and Cash flow statement preparation; Ratio analysis; Indian Accounting standards. ASB.

2. Time Value of Money

Time Value of Money, Present and Future Values; Annuity, Perpetuity; Fixed income securities, Valuing bonds, term structure of interest rates, yield curves, spot and forward rates; Capital Budgeting- internal rate of return, payback period; Valuation of Stocks- - Dividend discount model; Free cash flow model.

4. Risk and Returns

Expected utility; 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.

4. Market Efficiency

Efficient Market Hypothesis; Weak form, Semi-strong and Strong Form; Empirical evidence and Implications.

5. Asset Pricing Models

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).

Core texts:

1. Brealey, R. and S. Myers, Principles of Corporate Finance, fifth edition, New York, MGH

2. Bailey, R. E., "The Economics and Financial Markets", Cambridge University Press, 2005

3. Copeland, T. E. and J. F. Weston, Financial Theory and Corporate Policy, Addison Wesley

Additional readings:

4. Damodaran, A., "Investment Valuation: Tools and Techniques for Determining the Value of Any Asset", John Wiley & Sons 3rd Edition, 2012

5. Le Roy, S. F., and Werner, J. Principles of Financial Economics, CUP, 2000

6. Elton, E.J and M.J. Gruber, Modern Portfolio Theory & Investment Analysis, (fourth edition) John Wiley & Sons 1991.

7. Stephen A. Ross, Randolph W. Westerfield and Bradford D. Jordan, Fundamentals of Corporate Finance. McGraw-Hill, 7th edition, 2005.

8. Mishkin, F. S., Eakins, S.G., Jayakumar, T. and Pattnaik, R.K., "Financial Markets and Institutions" Pearson, 8th Ed, 2017

Behavioural Economics

Course Description: The aim of this course is to acquaint and train students with main areas of behavioral economics, focus would be rendered on behavioral implications of theoretical models. Some of the areas of behavioral economics include bounded rationality, decision making under risk and uncertainty, other regarding preferences and intertemporal decision making.

Learning outcomes:

1. Knowledge of how incorporating human behavioural/ psychological factors into standard theories and improve the predictive power of economic theories.
2. Able to discuss the theories of rational choice under certainty and uncertainty.
3. Demonstrate understanding of how behavioral economics can be used to improve decision making process.

Modules

1. Introduction

Introduction to Behavioral Economics; What is Behavioral Economics? Behavioral Economics and the Standard Economic Models (The Neoclassical Repairshop); Evaluating Economic Theories; History and Evolution: the Neoclassical Approach; The Resurgence of Psychology. Birth of Behavioral Economics as we know it; Methodology and Data Sources (Economics and Psychology).

2. Rationality

Bounded Rationality; The notion of Bounded Rationality– The emergence of bounded rationality; Ecological Bounded Rationality; Fast and Frugal Heuristics.

3. Decision making

Decision-making Under Risk and Uncertainty; Expected Utility Theory (Axioms); Anomalies in Expected Utility Theory; Prospect Theory – Editing Phase and Comments – Evaluation Phase – Reference Point – Loss Aversion..

4. **Preference**

Other-regarding Preferences; The standard self-interest hypothesis; Evidence from the lab (Ultimatum Game, Gift Exchange Game, Trust Game, Public Good Game); Social Preference; Altruism and quasimaximin preferences; Relative income and envy; Inequity Aversion; Intention-based Reciprocity; Fairness Equilibrium.

Core texts:

1. Dhami S., (2016), The Foundations of Behavioral Economic Analysis, Oxford University Press
2. Camerer, C. F., Loewenstein, G., & Rabin, M. (Eds.). (2004). Advances in behavioral economics. Princeton university press.

Additional readings:

3. Handbook of Behavioral Economics - Foundations and Applications 1

4. Gigerenzer, G. (2008). Gut feelings: Short cuts to better decision making. Penguin Uk.

5. Gigerenzer, G., & Selten, R. (Eds.). (2001). Bounded rationality. CogNet.

6. Sunstein, C. R., & Thaler, R. H. (2014). Nudge: Improving decisions about health, wealth, and happiness

7. Ariely, D., & Jones, S. (2008). Predictably irrational. New York, NY: Harper Audio.

8. Kahneman, D. (2011). Thinking, fast and slow. Macmillan.

9. Duhigg, C. (2012). The power of habit: Why we do what we do in life and business. Random House.

Social and Economic thoughts of Dr. B. R. Ambedkar

Course Description: The course shall provide an understanding of the Indian economy and the issues related to it through the perspective of Dr. B.R. Ambedkar. A fundamental and holistic understanding of the Indian society through a focus upon monetary, fiscal, caste, agriculture and labour aspects are emphasized.

Learning outcomes:

1. Awareness about the life and works of Dr. B. R. Ambedkar.
2. Ability to elaborate on the contributions of Dr. B. R. Ambedkar to monetary policy, thoughts on fiscal federalism and influence on labour laws.
3. Explain Dr. B. R. Ambedkar view on caste and its influence.

Modules

1. Issues in Monetary Economics

The Problem of Rupee and Exchange Rate in British India; The Argument about Gold Currency; International Trade and British Economy; Impact on Indian Economy and Causes of Drain on Indian Economy; The Macro Economy of British India; Economy and Society; Economic systems –National and Sub - National Economics; Role of State in Economic activities.

2. Fiscal Federalism

Federalism Across Provinces in British India; Genesis and its Incorporation into Indian Constitution and the Centre-State List – Type of Centre State Relation in Economics Terminology; Federalism and Provincial Finances; Ambedkar's thought on alternative sources of revenue; Ambedkar's study of provincial finance; Ambedkar cannons of expenditure; Relevance of Ambedkar's fiscal economics for the present day fiscal problems.

3. Caste and Economics of Caste

Genesis of Caste in India and its Influence on Income Inequality and Discrimination.

4. Agriculture and Issues Related to Irrigation

Problem of Small Farmers and Solutions for it; Approaching the problem in the Lewisian kind of framework; Problems of land ownership and landlessness; Ambedkar's thought on surplus labour utilization and capital formation; The problem of water sharing in India across states – Damodar Valley Project: Genesis, Design and Applications.

5. Understanding Labour Law

Genesis of Labour Party; Understanding Social Democracy; Need for Social democracy for Economic Development; Ambedkar's thought on alternative sources of revenue; Ambedkar's study of provincial finance; Ambedkar cannons of expenditure; Relevance of Ambedkar's fiscal economics for the present day fiscal problems – Equality and Buddha.

Core texts:

1. Ambedkar, B. R., "Administration and Finance of the East India Company", University of Columbia (republished in 1989), Dr. Babasaheb Ambedkar Writing and Speeches, Vol. No. VI, Government of Maharashtra, 1915.

2. Ambedkar, B. R., "Caste in India: Their Mechanism, Genesis and Development", Indian Antiquary, 1917.

3. Ambedkar, B. R., "The Evolution of Provincial Finance in British India: A Study in the Provincial Decentralization of Imperial Finance", P.S. King and Sons Ltd. republished in 1989), Dr. Babasaheb Ambedkar Writing and Speeches, Vol. No. VI, Government of Maharashtra, 1925.

4. Ambedkar, B. R., "The Problem of the Rupee: Its Origin and its Solution", P.S. King and Sons Ltd. republished in 1989), Dr. Babasaheb Ambedkar Writing and Speeches, Vol. No. VI, Government of Maharashtra, 1923.

5. Ambedkar, B. R., "Federation versus Freedom", R R Kale Memorial Lecture, Gokhale Institute of Politics and Economics, 1939.

6. Ambirajan, S., "Ambedkar's Contribution to Indian Economics", Economic and Political Weekly, Vol. 34, No. 46/47, 1999.

7. Mungekar, B., "The Essential Ambedkar", Rupa Publications India, 2015.

8. Thorat, S., "Ambedkar's Role in Economic Planning, Water and Power Policy", Shipra Publication, 2006.

Public Economics

Course Description: This is a course on government policies from the viewpoint of equity, efficiency and the role of the state. The course focuses on the various aspects of Indian Public Finance and discusses the structure and trends in revenues, expenditures and deficits.

Learning outcomes:

1. Ability to identify critical key issues in public economics through the principles of public finance.
2. Identify the tax principles that are relevant to economic development.
3. Analyze the budget process.
4. Familiar with policy challenges and analytical and empirical tools.

Modules

1. Public Finance

Meaning, nature, scope and importance of public finance; Public versus private finance; Principal of maximum social advantage; Concepts of market failure, private goods, public goods, merit goods, free riding and externalities; Coase theorem.

2. Public Revenue

Sources of revenue- tax and non-tax; Cannons of taxation- traditional and modern; Types of direct and indirect taxes; Progressive, regressive, proportional and digressive taxes; Single versus multiple tax, taxable capacity, impact and incidence of tax, tax evasion; Structure and trends of tax revenue in India.

3. Public Expenditure and Public Debt

Classification of public expenditure; Determinates, roles and effects of public expenditure; Cannons of public expenditure – traditional and modern; Theories of public expenditure- Wagner's law, Peacock-Wiseman hypothesis, Colin-Clarks critical limit theory.

4. Public Budget, Budgetary deficit and Public Debt in India

Classifications of budget, concept and objectives; Different concepts of deficit; Trends in financial deficit in India; Public debt - meaning, types, sources of internal and external public debt, effects, methods of repayment, FRBM Act; Fiscal federalism – an overview; Analysis of latest budget and fiscal policy.

Core texts:

1. Rosen, H. S. and Gayer, T., "Public Finance", McGraw-Hill/Irwin, 9th Edition, 2009.

2. Stiglitz, J. E., & Rosengard, J. K. (2015). Economics of the public sector: 4th ed. WW Norton & Company.

3. Dalton, H., "Principles of Public Finance", Routledge, 1st Edition, 2009.

4. Musgrave, R. and Musgrave, P., "Public Finance in Theory and Practice", McGraw-HillInternational Edition, 1989.

Additional readings:

5. Chelliah, R.J., "Towards Sustainable Growth: Essays in Fiscal and Financial Sector Reforms in India", Oxford University Press, 1996.

6. Cullis, J & Jones P, "Public Finance and Public Choice", OUP, 1st edition, 1998.

7. Various Government of India publications

<div align="center">**International Economics**</div>

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

Learning outcomes:

1. Understand economic measures relevant to international economics.
2. Conceptual understanding of core concepts and applications of both international trade and international finance.
3. Analyze the links between trade, international finance, economic growth and globalization.

Modules

1. Introduction

Different Waves of Globalization, Globalization of Trade, Globalization of Finance, Need for International Trade, International Trade and Economic Development. Balance of Payment (BOP) and its components, the concept of Exchange rate, Different Exchange rate systems.

2. Theories of International Trade

Mercantilist view on trade, Absolute Advantage theory, Theory of Comparative Advantage, Factor Endowments and Heckscher-Ohlin Theory, Factor Price Equalisation Theory, New Trade Theory: Economies of Scale, Imperfect Competition, and Intra-Industry Trade.

3. Trade Policy

Instruments of Trade Policy: Tariff and Non-Tariff Barriers, New Protectionism, Political Economy of Trade Policy, Import substitution and export promotion, Important Institutions in Global Trading System: GATT and WTO. Economic Integration: Multilateralism, Customs Union and Free Trade Areas.

4. International Finance

International Monetary System: The Gold Standard, Bretton-Woods system, Post-Bretton-Woods system, Exchange Rate Determination, Purchasing Power Parity, Monetary Theory, Financial Globalization, Financial Crisis, Currency War.

5. International Macroeconomic issues

The spill-over effect of monetary and fiscal policy, Capital flows, monetary policy and fiscal policy, international transmission of business cycles, Domestic impact of foreign monetary policy shocks, The need for international macroeconomic co-ordination. Optimum currency area and European experience.

Core texts:

1. Krugman, P., Obstfeld, M. and Melitz, M., "International Economics: Theory and Policy", Pearson Education, 10th Edition, 2017.

2. Salvatore, D., "International Economics", John Wiley, 13th Edition, 2019.

3. Carbaugh, R., "International Economics", Cengage Learning, 17th Edition, 2019.

4. Feenstra, R. C., & Taylor, A. M. (2021). International economics 5th Ed, Macmillan

Additional readings:

5. Caves, R. E., Frankel, J. A. and Jones, R. W., "World Trade and Payments: An Introduction", Pearson, 10th Edition, 2007.

6. Dunn Jr, R. M., and Mutti., J.H.,"International Economics, Routledge, 6th Edition, 2004.

7. Kindleberger, C.P., "International Economics, R.D. Irwin Homewood, 1976.

8. Pilbeam, K., "International finance*",* Palgrave Macmillan, 4th Edition, 2013.

<div align="center">**Environmental Economics**</div>

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 analyzed in detail.

Learning outcomes:

1. Gain a detailed understanding of the domain of environmental economics along with the fundamental principles and methods.
2. Use economic principles to analyze and investigate environmental problems and to assess environmental policies.
3. Examine recent environmental issues from an economists' point of view.

Modules

1. Introduction
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; Measuring of sustainable development; Sustainable macroeconomics accounting of national income and wealth; Green accounting; Environment Kuznets curve; Environmental cost-benefit analysis for sustainable development; Rationale of discounting future in the context of sustainability.

2. The Theory Externalities
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

Optimal level of pollution; Pollution reduction subsidies; Marketable pollution permits; Environmental instruments; Moral suasion, property rights and liability laws; Command and Control-Direct regulations such as effluent & technology standard with enforcement; Market based- Pollution charges and abatement costs; Pigouvian Tax; Emission taxes, Subsidies; The theory of marketable permits; The advantages of marketable permits; Types of permit system; Permit trading in practice; Quotas – Environmental Policy.

4. Environmental Valuation
Meaning of environmental valuation; Willingness to pay and Willingness to accept; Use Value-Direct Use Value & Indirect Use Value; Option & Quasi-option value-Non-Use Value and Existence value (Provisioning, Regulating, Habitat and Cultural & Amenities values); 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

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

Urban problems; Resettlement and rehabilitation; Environmental ethics; Evolution of environmental laws; Institutions- Environment-Development- Poverty Nexus.

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