



SOPHIA COLLEGE, (AUTONOMOUS)

Affiliated to

UNIVERSITY OF MUMBAI

Programme: B.A. ECONOMICS

Programme Code: SBAECO

T.Y.B.A. (2019-2020)

(Choice Based Credit System with effect from the year 2018-19)

Programme Outline: TYBA (SEMESTER V)

Course Code	Unit No	Name of the Unit	Credits
SBAECO501		MICROECONOMICS	4
	1	Monopoly	
	2	Basics of Game Theory	
	3	Oligopoly	
	4	General Equilibrium and Welfare Economics	
SBAECO502		ECONOMICS OF DEVELOPMENT	4
	1	Concepts of Economic Growth and Development	
	2	Structural Issues in Development Process	
	3	Inequality, Poverty and Development	
	4	Technology and Economic Development	
SBAECO503		ECONOMICS OF AGRICULTURE AND COOPERATION	2.5
	1	Agricultural Productivity	
	2	Agricultural Credit	
	3	Agricultural Marketing	
	4	Agricultural Price and Policy	
SBAECO504		MATHEMATICAL AND STATISTICAL TECHNIQUES FOR ECONOMIC ANALYSIS	4
	1	Equations, Graphs and Derivatives	
	2	Liner Algebra	
	3	Descriptive Statistics and graphing techniques for presenting data	
	4	Elementary Probability Theory	
SBAECO505-A		INTRODUCTION TO ECONOMETRICS	4
	1	Idea of a Random Variable	
	2	Jointly Distributed Random Variables	
	3	Statistical Inference	
	4	Regression Analysis	
SBAECO505-B		ENVIRONMENTAL ECONOMICS	4
	1	Introduction to Environmental Economics	
	2	The Design and Implementation of Environmental Policy	

	3	Measuring Benefits of Environmental Improvements	
	4	Environmental Problems	
SBAECO506		HISTORY OF ECONOMIC THOUGHT	3
	1	Classical Period	
	2	Marginalist: Marshall to Schumpeter	
	3	Keynesian Ideas	
	4	Post-Keynesian Developments	

Programme Outline: TYBA (SEMESTER VI)

Course Code	Unit No	Name of the Unit	Credits
SBAECO601		MACROECONOMICS	4
	1	The Goods Market in The Open Economy	
	2	Money/Financial Markets and Mundell-Fleming	
	3	Exchange Rate Regimes and Exchange Rate Crisis	
	4	International Monetary History, 1900-Present	
SBAECO602		INTERNATIONAL ECONOMICS	4
	1	Introduction	
	2	Modern Theories of international Trade	
	3	Importance of Trade and Recent trends	
	4	Trade Policy and Regionalism	
SBAECO603		INDIAN FINANCIAL SYSTEM	2.5
	1	Indian Financial system: Structure, Trends and Turns	
	2	Banking in India since 1990's	
	3	Money and Capital Markets in India	
	4	Non-Banking Sector of the Financial System	
SBAECO604		MATHEMATICAL AND STATISTICAL TECHNIQUES FOR ECONOMIC ANALYSIS	4
	1	Techniques and Applications of Partial Derivatives	
	2	Integral Calculus	
	3	Correlation and Regression	
	4	Index Numbers and Time Series	
SBAECO605-A		THEORY AND PRACTICE OF ECONOMETRICS	4
	1	Econometric Model Specification	
	2	Failure of Classical Assumptions	
	3	Forecasting	
	4	Linear Programming	
SBAECO605-B		DEVELOPMENT THEORY AND EXPERIENCE	

	1	Demography and Development	4
	2	Structural Transformation	
	3	Land, Labour and Credit Markets	
	4	The Environment and Development	
SBAECO606		INTERNATIONAL TRADE, POLICY AND PRACTICE	3
	1	Introduction	
	2	Emerging new International Economic Order	
	3	International Financial Institutions and International Debt Problem	
	4	Role of Foreign Capital Flow	

Preamble:

The Board of Studies in Economics, Sophia College for Women (Autonomous) has finalized the syllabi of papers at the TYBA which will be made effective from the Academic Year 2018-2019. The syllabus of TYBA has been framed keeping in view the recent trends in the subject of economics. The TYBA Economics program at Sophia College for Women is designed to provide students with a comprehensive understanding of economic theories, principles, and practices. Through a structured curriculum, students will explore various facets of microeconomics, macroeconomics, international trade, development studies, mathematical and statistical techniques, econometrics, history of economic thought, agricultural economics, environmental economics, and Indian financial system. The program aims to equip students with quantitative tools, analytical skills, critical thinking and a global perspective to navigate the complexities of the modern economic landscape. By fostering a deep understanding of economic concepts and their real-world applications, the TYBA Economics program at Sophia College prepares students for a successful career in economics, finance, research, and policymaking. The papers which would be offered to the students of Sophia College at TYBA in Semester V and Semester VI have been enlisted below.

PROGRAMME OBJECTIVES

PO 1	Enhance students' understanding of the contemporary socio-economic issues at the local, national and international level
PO 2	Apply critical thinking in pursuit of everyday living
PO 3	Develop an in-depth understanding of various theories in economics and to impart skills in data analysis and interpretation
PO 4	Use analytical skills acquired through the programme to seek gainful employment

PROGRAMME SPECIFIC OUTCOMES

PSO 1	Gain better understanding about the stream of economics
PSO 2	Apply the basic ideas of economic theory to understand the consumers and producers behaviour
PSO 3	Enable students to do basic calculation of economic concepts

PSO 4	Students will be able to apply their analytical skills, knowledge and improve their ability to respond sensitively while dealing with these socio-economic issues
PSO 5	Students will be able to critically analyse the implications of governments policies and have opinion on the same based on their competent knowledge in economics and skills in data analysis

SEMESTER V

NAME OF THE COURSE	MICRO ECONOMICS (PAPER IV)	
CLASS	TYBA	
COURSE CODE	SBAECO501	
NUMBER OF CREDITS	4	
NUMBER OF LECTURES PER WEEK	4	
TOTAL NUMBER OF LECTURES PER SEMESTER	52	
EVALUATION METHOD	INTERNAL ASSESSMENT	SEMESTER END EXAMINATION
TOTAL MARKS	25	75
PASSING MARKS	10	30

COURSE OBJECTIVES

CO 1.	To improve students' understanding of the microeconomics concepts through applications to oligopoly decision making in the real world
CO 2.	To make students understand the general equilibrium framework of economic analysis & introduce them to the basic principles of welfare economics
CO 3.	To introduce students to the problems resulting from information asymmetry in economic decision making
CO 4.	To familiarize students with the fundamental principles of behavioral economics

COURSE LEARNING OUTCOMES:

CLO 1.	Students will be able to identify the difference between the pure & differentiated oligopoly
CLO 2.	Students will be able to compare, on the basis of different behavioural assumptions, the various types of duopoly and oligopoly models
CLO 3.	Students will be able to draw a diagram/ solve algebraic equations to determine equilibrium level of output & price for the various types of oligopoly models
CLO 4.	Students will be able to draw a diagram/ solve algebraic equations to determine equilibrium level of output & price for the various types of oligopoly models
CLO 5.	Students will be able to comprehend the application of game theory concepts in oligopoly decision making

CLO 6.	Students will be able to distinguish between partial and general equilibrium framework of economic analysis
CLO 7.	Students will understand the concept of Pareto Optimality & will be able to state the conditions under which it is attained
CLO 8.	Students will be able to understand the principles of maximum social welfare
CLO 9.	Students will be able to describe the importance of information & the role of search cost
CLO 10.	Students will be able to discuss the problems resulting from information symmetry in the used car market, insurance market, credit market & labor market
CLO 11.	Students will be able to understand psychological dimensions of human behaviour & will be able to explain the importance of assumption of rationality in economic decision making

SYLLABUS

UNIT 1	Monopoly
1.1	sources of monopoly
1.2	calculation of price, output and profit for a monopoly
1.3	price discrimination: First and third degree-public policy towards monopoly
1.4	Profit maximising monopoly
UNIT 2	Basics of Game theory
2.1	Prisoner's dilemma, dominant strategy equilibrium
2.2	Battle of sexes game
2.3	Nash equilibrium
2.4	Extensive form games – game tree Solving finite extensive form game
UNIT 3	Oligopoly
3.1	the Cournot model
3.2	the Bertrand model, the Edgeworth model
3.3	the Chamberlin model – the Kinked demand curve model
3.4	Collusion and Cartels – Price Leadership

UNIT 4	General Equilibrium and Welfare Economics
4.1	Interdependence in the Economy – General Equilibrium and its Existence
4.2	The Pareto Optimality Condition of Social Welfare , Marginal Conditions for Pareto Optimal Resource Allocation
4.3	Perfect Competition and Pareto Optimality - Kaldor- Hicks Compensation Criterion
4.4	Arrow’s Impossibility Theorem

REFERENCES:

- Koutsoyannis, Modern Microeconomics, Macmillan Press Ltd., London. 2
- Mankiw, N. Gregory, Principles of Microeconomics, 7 th edition, Cengage Learning, 2015
- Mansfield, Edwin; Micro-economics: Theory & Applications, 5th edition, W.W. Norton & Company, New York, 1985.
- Sen Anindya (2007), Microeconomics: Theory and Applications, Second edition Oxford University Press, New Delhi, 2007.
- Salvatore, D.; Microeconomics : Theory and Applications , New Delhi Oxford, New Delhi, Oxford University Press 2006.
- R.Gibbons (1992) : A Primer in Game Theory, Harvester Wheatsheaf.

SEMESTER V

NAME OF THE COURSE	ECONOMICS OF DEVELOPMENT	
CLASS	TYBA	
COURSE CODE	SBAECO502	
NUMBER OF CREDITS	4	
NUMBER OF LECTURES PER WEEK	4	
TOTAL NUMBER OF LECTURES PER SEMESTER	52	
EVALUATION METHOD	INTERNAL ASSESSMENT	SEMESTER END EXAMINATION
TOTAL MARKS	25	75
PASSING MARKS	10	30

COURSE OBJECTIVES

CO 1.	This course is designed to acquaint students with diverse concepts related to economic growth and development by giving special emphasis on structural issues related to the process of development.
CO 2.	To understand the various theories of development, study development indicators and Sen's views on development
CO 3.	An attempt is made to create an awareness about the pressing problems in the path of development such as inequality, poverty and technological aspects and the policy options to deal with these problems

COURSE LEARNING OUTCOMES:

CLO 1.	Students will be able to think critically about the issues related to growth and development
CLO 2.	Understand development achievements globally and critically examine the policies undertaken by governments.
CLO 3.	Students will be able to analyze the role of technology in the development process.

SYLLABUS

UNIT 1	Concepts of Economic Growth and Development
1.1	Meaning of Growth and Development, Distinction between growth & development, Sustainable development, Green GDP
1.2	Concept of human development, HDI, GDI
1.3	Three core values of development
1.4	Capabilities & functioning
UNIT 2	Structural Issues in Development Process
2.1	Big push theory and dual economy models of growth
2.2	Role of Education, health & nutrition in economic development
2.3	Schumpeter's theory of development & Theory of human capita
2.4	Solow's growth model
UNIT 3	Inequality, Poverty and Development
3.1	Measures of poverty and inequality

3.2	Kuznets inverted U-hypothesis
3.3	Policy options for poverty alleviation
3.4	Inclusive growth & Rural credit institutions.
UNIT 4	Technology and Economic Development,
4.1	Role of Infrastructure in economic development
4.2	Role of technology in economic development
4.3	Types of technical progress
4.4	Intermediate/ Appropriate technology, Green technology

REFERENCES:

- Todaro, Michael P. and Stephen C. Smith. Economic Development, 8e. Delhi: Pearson Education, 2003.
- Thirlwall, A.P. Growth and Development 8e. New York: Palgrave MacMillan, 2005.
- Meier, Gerald M. and James E. Rauch. Leading Issues in Economic Development, 8e. New Delhi: Oxford Univ. Press, 2006.

SEMESTER V

NAME OF THE COURSE	ECONOMICS OF AGRICULTURE AND COOPERATION (PAPER VI)	
CLASS	TYBA	
COURSE CODE	SBAECO504	
NUMBER OF CREDITS	2.5	
NUMBER OF LECTURES PER WEEK	3	
TOTAL NUMBER OF LECTURES PER SEMESTER	36	
EVALUATION METHOD	INTERNAL ASSESSMENT	SEMESTER END EXAMINATION
TOTAL MARKS	25	75
PASSING MARKS	10	30

COURSE OBJECTIVES

CO 1.	This paper aims at providing an overview of the role of agriculture in the economic development of the country and the salient features associated with agricultural productivity and agricultural labour
CO 2.	The pertinent aspects related to agricultural credit, agricultural marketing as well as the global problems existing in the marketing are dealt in
CO 3.	Discuss the features of agricultural policy relating to price, agricultural inputs and discuss the issue of agrarian crisis and farmers' suicide

COURSE LEARNING OUTCOMES:

CLO 1.	Students will understand the role of agriculture in economic development with reference to the stages of economic development
CLO 2.	Students will be able to identify the cropping seasons & the types of crops grown during these seasons
CLO 3.	Students will be able to analyse the causes of low agricultural productivity
CLO 4.	Students will be able to explain the most important dimensions of effective water management
CLO 5.	Students will be able to suggest measures to improve the condition of agricultural labour
CLO 6.	Understanding of the rural credit market and practical real life problems of agricultural marketing.
CLO 7.	Students will be able to critically analyse agricultural price policy in India
CLO 8.	Students will be able to evaluate the various schemes of the Food Security Programme in India
CLO 9.	Students will be able to appraise the existing policies on agricultural inputs like fertilizer and power
CLO 10.	Students will be able to highlight the features of crisis in the agriculture sector and describe the situations of farmers' suicide in India

SYLLABUS

UNIT 1	Agricultural Productivity
1.1	Role of agriculture in economic development
1.2	Cropping Pattern.Agricultural Productivity, Causes of Low Productivity in Agriculture - Measures taken to improve the Agricultural Productivity in India
1.3	Water Management and agricultural development
1.4	Agricultural labour- Problems and suggestions.

UNIT 2	Agricultural Credit
2.1	Institutional and Non-Institutional Sources of Credit
2.2	Co-operative Credit and Agriculture
2.3	Commercial Banks and Regional Rural Banks. Micro finance
2.4	Rural Indebtedness. NABARD - Role and Performance
UNIT 3	Agricultural Marketing
3.1	Types of Marketing - Corporate, Commodity and Global
3.2	Measures of Agricultural Marketing
3.3	WTO and Indian Agriculture
3.4	Problems of Agricultural Marketing and its measures
UNIT 4	Agricultural Price and Policy
4.1	New Agricultural Policy – 2007, Price Policy of CACP & Evaluation
4.2	Food Security in India
4.3	Agricultural Crisis and Farmers' Suicide
4.4	Agro-Tourism and its policy

- REFERENCES:

- Bilgram, S.A.R, Agricultural Economics, Himalaya Publication House, Delhi, 1966
- Raj K.N, Essays in Commercialization of Indian Agriculture, Oxford University Press, New Delhi, 1988.
- Thamarajalaxmi R, Intersectoral Relationship in Developing Economy, Academic Foundation, Delhi, 1994.
- Memoria C. B, Agricultural Problems of India, Kitab Mahal Allahabad, 1979.
- Datt and Sundaram, Indian Economy, S.Chand & Company, New Delhi, 2012.
- Mishra &Puri, Indian Economy, Himalaya Publishing House, New Delhi,2012.
- World Development Report 2008: Agriculture for Development

NAME OF THE COURSE	MATHEMATICAL AND STATISTICAL TECHNIQUES FOR ECONOMIC ANALYSIS	
CLASS	TYBA	
COURSE CODE	SBAECO504	
NUMBER OF CREDITS	4	
NUMBER OF LECTURES PER WEEK	4	
TOTAL NUMBER OF LECTURES PER SEMESTER	60	
EVALUATION METHOD	INTERNAL ASSESSMENT	SEMESTER END EXAMINATION
TOTAL MARKS	25	75
PASSING MARKS	10	30

COURSE OBJECTIVES

CO 1.	To introduce students to the basic mathematical & statistical tools, which will enable them to apply these to economic decision making.
CO 2.	To equip the students with quantitative skills that will help them in better understanding of economics.
CO 3.	To facilitate the description, interpretation and understanding of data.
CO 4.	To enhance the computational & numerical skills, ability to interpret numerical data & diagrammatic presentations required to analyse economic concepts.

COURSE LEARNING OUTCOMES:

CLO 1.	Students will be able to apply mathematical approach to study market equilibrium and impact of indirect tax on market equilibrium.
CLO 2.	Students will be able to differentiate single variable functions and apply the differentiation method to optimise economic functions.
CLO 3.	Students will be able to solve a system of linear equations using method of matrix
CLO 4.	Students will be able to apply the method of matrix in economics.
CLO 5.	Students will be able to identify the different types of data.
CLO 6.	Students can classify & present numerical data using tables, graphs & diagrams.
CLO 7.	Students will be able to compute mean, median, mode & measures of dispersion

	(absolute & relative).
CLO 8.	Students will be able to graphically locate the mode & median.
CLO 9.	Students will be able to draw graphs showing (based on the relative positions of mean, median & mode) positively skewed & negatively skewed frequency distributions.
CLO 10.	Students will be able to understand the construction of the Lorenz Curve.
CLO 11.	Students will be able to describe the merits & demerits of measures of central tendency & dispersion.
CLO 12.	Students will be able to identify the specific uses of these measures to specific situations/problems.
CLO 13.	Students will be able to compute the probability of an event using the classical definition of probability.
CLO 14.	Student will be able solve problems based on application of binomial & normal distributions
CLO 15.	Students will be able to understand and apply the properties of the probability distributions for the random variable (for discrete & continuous) to solve numerical problems.

SYLLABUS

UNIT 1	A: Microeconomic applications of equations and graphs B: Derivatives and their applications in various areas of economic analysis
1.1	Linear and non-linear relationships in economic analysis, Market demand and supply models, taxes, elasticity
1.2	Derivatives, Higher order derivatives
1.3	Increasing and decreasing functions; Necessary and sufficient conditions for maxima and minima
1.4	Optimisation of economic functions
UNIT 2	Linear Algebra
2.1	Matrices and basic operations on matrices
2.2	Rank of a Matrix
2.3	Inverse of a matrix
2.4	Cramer's Rule
2.5	Input-Output Analysis and policy implications
2.6	Linear Programming Problem: Formulation and graphical solution

UNIT 3	A: Descriptive Statistics and graphing techniques for presenting data B: Commercial Statistics
3.1	Concept of primary and secondary data along with tabulation and graphs
3.2	Measures of central tendency (only arithmetic-mean, median, and mode)
3.3	Absolute and relative measures of dispersion (range, quartile deviation, mean deviation and standard deviation) with simple applications.
3.4	Measures of skewness and kurtosis
3.5	Lorenz Curve
UNIT 4	Elementary Probability Theory
4.1	Sample space and events
4.2	Mutually exclusive, exhaustive and complimentary events
4.3	Conditional probability
4.4	Binomial probability distribution
4.5	Nature and Properties of the Normal Probability Distribution; Standard Scores and the Normal Curve; The Standard Normal Curve: Finding Areas when the Score is Known, Finding Scores when the Area is Known

REFERENCES:

1. Dowling Edward T: Introduction to Mathematical Economics, Schaum Outline Series in Economics, Tata McGraw -Hill, New Delhi, 2004.
2. Dowling Edward T: Theory and Problems of Mathematical Methods for Business and Economics, McGraw –Hill, 1993.
3. Gupta S.P.: Statistical Methods, S. Chand, New Delhi.
4. Lerner Joel J and P.Zima: Theory and Problems of Business Mathematics, McGraw Hill, New York, 1986.
5. Pfitzner Barry C.: Mathematical Fundamentals of Microeconomics, Biztantra, New Delhi, 2003.
6. Sancheti D.C. and V.K. Kapoor: Statistics-Theory, Methods and Applications, S. Chand, New Delhi
7. V. K. Kapoor and S. C. Gupta: Fundamentals of Mathematical Statistics, Sultan Chand & Sons, New

Delhi.

8. Wisniewski Mik: Mathematics for Economics-An integrated approach, Palgrave Macmillan, 2013.

NAME OF THE COURSE	INTRODUCTION TO ECONOMETRICS	
CLASS	TYBA	
COURSE CODE	SBAECO505-A	
NUMBER OF CREDITS	4	
NUMBER OF LECTURES PER WEEK	4	
TOTAL NUMBER OF LECTURES PER SEMESTER	60	
EVALUATION METHOD	INTERNAL ASSESSMENT	SEMESTER END EXAMINATION
TOTAL MARKS	25	75
PASSING MARKS	10	30

COURSE OBJECTIVES

CO 1.	To develop a way of thinking in quantitative terms.
CO 2.	To impart a basic statistical knowledge that will aid in understanding econometrics.
CO 3.	To analyse economic data using the method of regression

COURSE LEARNING OUTCOMES:

CLO 1.	Apply binomial, poisson and normal distribution to calculate probability
CLO 2.	Conduct tests of hypothesis on mean using z and t test
CLO 3.	Conduct test of hypothesis on variance using chi-square and F -test.
CLO 4.	Estimate simple regression model using OLS
CLO 5.	Report and interpret simple regression model results

SYLLABUS

UNIT 1	Idea of a random variable
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1.1	Concept of a random variable: Discrete and continuous
1.2	Expected values of a random variable
1.3	Variance of a random variable
1.4	Discrete random variables: Bernoulli, Binomial, Poisson
1.5	Continuous random variables: The normal distribution
UNIT 2	Jointly distributed Random variables
2.1	Joint and marginal distributions for bivariate random variables
2.2	Conditional probability
2.3	Conditional mean and variance
2.4	Covariance
2.5	Correlation and Partial correlation
2.6	Central limit theorem (without proof)
UNIT 3	Statistical Inference
3.1	Point and interval estimation
3.2	The Z distribution, The Null and Alternate hypotheses and significance testing for mean using Z distribution when population variance is known
3.3	The chi-square distribution and testing for sample variance with known population variance
3.4	The F distribution and comparing sample variances
3.5	The t distribution and hypothesis tests when population variance is unknown
UNIT 4	Regression Analysis
4.1	Two variable regression model
4.2	The concept of the PRF
4.3	Classical assumptions of regression
4.4	Derivation of the OLS estimators and their variance

4.5	Properties of OLS estimators under classical assumptions, Gauss-Markov Theorem (without proof) Tests of Hypothesis, confidence intervals for OLS estimators
4.6	Measures of goodness of fit: R square and its limitations, adjusted R square and its Limitations.

REFERENCES:

1. Gujarati Damodar (2012), Basic Econometrics, Tata McGraw Hill Education Private Limited, New Delhi.
2. Hatekar Neeraj (2009), Econometrics: The First Principles: A Friendly Introduction (using R), Sage Publications India Pvt Ltd.
3. A.H. Studenmund (2017), A Practical Guide to using Econometrics, Pearson India Education Services Pvt. Ltd.
4. Dougherty Christopher , (2011), Introduction to Econometrics, Oxford University Press.
5. Salvatore Dominick, Theory and Problems of Statistics and Econometrics, Schaum's outline series.
6. Sancheti D.C. and V.K. Kapoor: Statistics-Theory, Methods and Applications, S. Chand, New Delhi.

NAME OF THE COURSE	ENVIRONMENTAL ECONOMICS	
CLASS	TYBA	
COURSE CODE	SBAECO505-B	
NUMBER OF CREDITS	4	
NUMBER OF LECTURES PER WEEK	4	
TOTAL NUMBER OF LECTURES PER SEMESTER	60	
EVALUATION METHOD	INTERNAL ASSESSMENT	SEMESTER END EXAMINATION
TOTAL MARKS	25	75
PASSING MARKS	10	30

COURSE OBJECTIVES

CO 1.	The course focuses on the evolution of environmental economics, global environmental problems and measuring sustainability.
CO 2.	In particular, students will get acquainted with the economic valuation of environmental goods.
CO 3.	To sensitize students about the global & local environmental challenges.
CO 4.	To create awareness about environmental policy issues with reference to the developing & developed countries.
CO 5.	To improve understanding regarding the classification and mechanism of the various policy Instruments.
CO 6.	To sensitize students about the major concerns related to the effective implementation of the policy.

COURSE LEARNING OUTCOMES:

CLO 1.	Students will be able to list out and explain the problems in managing the environmental resources.
CLO 2.	Students will be able to understand the nature of the environmental resources as: public good.
CLO 3.	Students will develop analytical skills to understand the management of environmental resources using the common pool resource framework.
CLO 4.	Students will be able to appreciate the complexity of the transboundary environmental challenges.
CLO 5.	Students will be able to judge the efficacy of the environmental policy based on a specified criteria.
CLO 6.	Students will be able to describe the relative merits & demerits of the various environmental policy instruments.
CLO 7.	Students will be able to explain (with diagram) the mechanism involved in the working of the various policy instruments.
CLO 8.	Students will be able to evaluate a case study related to the design & implementation of environmental policy in the context of developing countries.
CLO 9.	Students will be able to analyze the difference between rigorousness (or permissiveness) of the environmental policy framework in the developed country & the poor country.

SYLLABUS

UNIT 1	Introduction to Environmental Economics
1.1	What is environmental economics?
1.2	Review of microeconomics and welfare economics
1.3	Pareto optimality and market failure in the presence of externalities

1.4	Property rights and Coase theorem
UNIT 2	The design and implementation of Environmental Policy
2.1	Overview-Criteria for evaluating environmental policies
2.2	Environmental standards
2.3	Pigovian taxes and effluent fees, tradable permits, choice between taxes and quotas
2.4	Implementation of environmental policy
UNIT 3	Measuring benefits of environmental improvements
3.1	Economic value of Environment, Use and Non-use values
3.2	Measurement method: market based and non-market based methods
3.3	Contingent valuation, travel cost method, hedonic price method
3.4	Risk assessment and perceptions
UNIT 4	Environmental problems
4.1	The global environment- Trans-boundary environmental problems
4.2	Economics of climate change,
4.3	International environmental Agreements
4.4	Sustainable development: Concepts and measures

REFERENCES:

1. Barry C. Fields: Environmental Economics : An Introduction, McGraw Hill International Edition, 1997
2. Charles Kolstad): Environmental Economics, Oxford University Press, New York, 2000
3. Kaltschmitt, Martin, Streicher, wolfgang, Wiese, Andreas, Renewable Energy: Technology, Economics and Environment, Springer, Germany, 2007.
4. Hanley Nick, Shogren Jason and white Ben: Introduction to Environmental Economics, Oxford University Press, New York, 2011
5. Smith Stephen: Environmental Economics: A very Short Introduction, Ist Edition, Oxford University Press, New York, 2011

6. United Nations Sustainable Development, UN Conference on Environment & Development, Rio de Janeiro, Brazil, Agenda 21
7. <https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf,1992>.

NAME OF THE COURSE	HISTROY OF ECONOMIC THOUGHT	
CLASS	TYBA	
COURSE CODE	SBAECO506	
NUMBER OF CREDITS	2.5	
NUMBER OF LECTURES PER WEEK	3	
TOTAL NUMBER OF LECTURES PER SEMESTER	45	
EVALUATION METHOD	INTERNAL ASSESSMENT	SEMESTER END EXAMINATION
TOTAL MARKS	25	75
PASSING MARKS	10	30

COURSE OBJECTIVES

CO 1.	To expose students to the contributions made by the celebrated economists to the field of economics.
CO 2.	To enhance students' understanding about the evolution of economic ideas.
CO 3.	To enable students to appreciate the importance of the Nobel Prize winning contribution of the Nobel Laureate.
CO 4.	To encourage students to carry out a project/assignment with a presentation exploring life, work and celebrated work & its applications to modern day economics by eminent scholars.

COURSE LEARNING OUTCOMES:

CLO 1.	Students will be able to describe the main features of Mercantilism, Physiocracy & Classic School ideology.
CLO 2.	Students will be able to analyse Adam Smith's views on division of labour,

	productive & unproductive labour, theory of value and capital accumulation.
CLO 3.	Student will be able to evaluate Ricardo's views on theory of value, rent & distribution (with diagram).
CLO 4.	Students will be able to distinguish between the difference between the Smith's & Ricardo's approach to theory of value.
CLO 5.	Students will be able to comprehend Karl Marx's concepts of dynamics of social changes, theory of values, surplus value, profit and crisis of capitalism and contemporary relevance.
CLO 6.	Students will be able to critically explain the economic views (taught in the class) of Marshall, Pigou and Keynes.
CLO 7.	Students will be able to examine & present the life, work and applications of the celebrated work by the post Keynesian economists.

SYLLABUS

UNIT 1	Classical Period
1.1	Adam Smith - Division of labour, theory of value, capital accumulation, distribution
1.2	David Ricardo - Value, theory of rent, distribution.
1.3	Karl Marx - dynamics of social changes, theory of values, surplus value
1.4	Profit and crisis of capitalism and contemporary Relevance
UNIT 2	Marginalist: Marshall to Schumpeter
2.1	Marshall : Role of time in price determination, economics methos, ideas of consumer's surplus, representative firm, external and internal economies, quasi-rent, nature of profit
2.2	Pigou- Welfare Economics
2.3	Schumpeter – Role of entrepreneur and innovation
UNIT 3	Keynesian Ideas
3.1	Liquidity Preference Theory and Liquidity Trap
3.2	Consumption Function, MPC, Multiplier and Accelerator principles and their interaction

3.3	Wage rigidities, Underemployment equilibrium
3.4	Role of fiscal policy: deficit spending and public works, multiplier principles, cyclical behaviour of the economy
UNIT 4	Post-Keynesian Developments
4.1	Hayek
4.2	Supply side economics: Arthur Laffer, Evans
4.3	Monetarism: Milton Friedman's Don Patinkin
4.4	An overview of new classical economics: Robert Lucas
4.5	Nobel Prize winners in Economics: A.K. Sen (1998), Joseph Stiglitz (2001), Paul Krugman (2008), Jean Tirole (2014), Angus Deaton (2015), Richard Thaler (2017)

REFERENCES:

1. Gide, O. and G. Rist , A History of Economic Doctrine, George Harrop Co., London, 1956.
2. Roll, E, A History of Economic Thought, Faber Landon, 1973.
3. Dasgupta A. K, Epochs of Economic Theory Oxford University Press. New Delhi, 1985.
4. Schumpeter, J.A, Ten Great Economist, Oxford University Press, New York, 1951.
5. Ghosh and Ghosh, Concise History of Economic Thought, Himalaya Publishers,1996.
6. Puttaswamaiah K, Nobel Economists – Lives and Contributions, Indus Public Co., New Delhi, 1995.

SEMESTER 6

NAME OF THE COURSE	MATHEMATICAL AND STATISTICAL TECHNIQUES FOR ECONOMIC ANALYSIS
CLASS	TYBA
COURSE CODE	SBAECO604
NUMBER OF CREDITS	4
NUMBER OF LECTURES PER	4

WEEK		
TOTAL NUMBER OF LECTURES PER SEMESTER	60	
EVALUATION METHOD	INTERNAL ASSESSMENT	SEMESTER END EXAMINATION
TOTAL MARKS	25	75
PASSING MARKS	10	30

COURSE OBJECTIVES

CO 1.	Develop the requisite quantitative skills needed for application of mathematical techniques in economics.
CO 2.	Apply the methods of partial differentiation and integration in solving problems and understanding of economics
CO 3.	To equip students with the tool to study the relationship between two or more variables.
CO 4.	To introduce the concept of linear regression using OLS
CO 5.	To expose students to the concepts of index numbers and time series

COURSE LEARNING OUTCOMES:

CLO 1.	Students will be able to use the method of partial differentiation to obtain various functions like marginal revenue, marginal product, marginal cost
CLO 2.	Students will be able to calculate price, income and cross elasticity of demand given the demand function.
CLO 3.	Students will be able to calculate constrained optimisation problems in economics
CLO 4.	students will be able to apply integration method to obtain various economic functions like total revenue, total cost, consumption function ,etc
CLO 5.	Students will be able to apply integration to calculate present value, consumer's surplus, producer's surplus,
CLO 6.	Students will be able to apply a method of integration learning curve to calculate labour requirement
CLO 7.	Students will be able to compute numerical problems based on correlation and regression analysis
CLO 8.	Students will be able to solve numerical problems based on index numbers and time series analysis
CLO 9.	Students will be able to describe the application and limitations of index numbers

SYLLABUS

UNIT 1	Techniques and applications of partial derivatives
1.1	Functions of several variables and partial derivatives
1.2	Second order partial derivatives
1.3	Optimisation of multivariable functions
1.4	Constrained optimisation with Lagrange multiplier and its economic interpretation
1.5	Marginal productivity, Income and price elasticities of demand
1.6	Homogeneous production functions and returns to scale
1.7	Cobb-Douglas production function
UNIT 2	Integral Calculus
2.1	Integration and Definite integral; area under the curve
2.2	Economic applications
2.3	Present value of cash flows (present value of a sum to be received in future and present value of a stream of future income)
2.4	Consumer's and Producer's Surplus
2.5	Learning curve
UNIT 3	Correlation and Regression
3.1	The meaning and significance of Correlation; Scatter plot of Bivariate Distributions; Correlation and Causation
3.2	Karl Pearson's coefficient of correlation
3.3	Spearman's rank correlation coefficient
3.4	Simple regression analysis- Method of Least Squares and Regression Lines
3.5	Regression Coefficients, Relationship between correlation coefficients and regression coefficients.
UNIT 4	Index Numbers and Time Series
4.1	Simple and composite index numbers

4.2	Construction, uses and problems of index numbers
4.3	Laspeyre's, Paasche's and Fisher's Index numbers
4.4	Cost of living index numbers-real income – wholesale price index number
4.5	Splicing of index numbers
4.6	Components of time series
4.7	Estimation and forecasting of trend by the Least Squares Method

REFERENCES:

1. Dowling Edward T: Introduction to Mathematical Economics, Schaum's Outline Series in Economics, Tata McGraw Hill, New Delhi, 2004
2. Lerner Joel J and P. Zima: Theory and Problems of Business Mathematics, McGraw Hill, New York, 1986.
3. Dowling Edward T. Theory and Problems of Mathematical methods for Business and Economics, McGraw –Hill, 1993
4. Gupta S.P. Statistical Methods, S. Chand, New Delhi.
5. Sancheti D. C. and V. K. Kapoor: Statistics-Theory, Methods and Applications, S. Chand, New Delhi

SEMESTER VI

NAME OF THE COURSE	THEORY AND PRACTICE OF ECONOMETRICS	
CLASS	TYBA	
COURSE CODE	SBAECO605-A	
NUMBER OF CREDITS	4	
NUMBER OF LECTURES PER WEEK	4	
TOTAL NUMBER OF LECTURES PER SEMESTER	60	
EVALUATION METHOD	INTERNAL ASSESSMENT	SEMESTER END EXAMINATION
TOTAL MARKS	25	75
PASSING MARKS	10	30

COURSE OBJECTIVES

CO 1.	To help understand the assumptions underlying the method of OLS and consequences of its violations
CO 2.	To give an understanding of basic knowledge of how to detect and treat violations of OLS assumptions
CO 3.	To introduce advanced methods and techniques in econometrics

COURSE LEARNING OUTCOMES:

CLO 1.	Understand the problem and consequences of endogeneity
CLO 2.	Explain the consequences of violation of assumption underlying the OLS method of estimating a regression model.
CLO 3.	Detect and treat problems like multicollinearity, heteroscedasticity, autocorrelation, omitted variables bias in the regression model.
CLO 4.	Forecast using linear, exponential and linear regression model
CLO 5.	Solve Linear Programming Problems

SYLLABUS

UNIT 1	Econometric Model Specification
1.1	Identification: Structural and reduced form
1.2	Omitted Variables Bias
1.3	Errors in measurement
1.4	Endogeneity and Bias
UNIT 2	Failure of Classical Assumptions
2.1	Multi-collinearity and its implications
2.2	Auto-correlation: Consequences and Durbin-Watson test
2.3	Heteroskedasticity: Consequences and the Goldfeld -Quandt test
UNIT 3	Forecasting

3.1	Forecasting with a) moving averages b) linear trend c) exponential trend- CAGR
3.2	Forecasting with linear regression
3.3	Classical time series decomposition
3.4	Measures of forecast performance: Mean Square Error and Root Mean Square Error
3.5	Limitations of econometric forecasts
UNIT 4	Linear Programming
4.1	Linear programming
4.2	Dual of a linear programming problem
4.3	Simplex method
4.4	Transportation

REFERENCES:

1. Gujarati Damodar, Basic Econometrics.
2. Hatekar Neeraj (2009), Econometrics: The First Principles A Friendly Introduction.
3. Kapoor V. k. (2011), Operations Research Problems & Solutions, Sultan Chand & sons.
4. Lipschutz (Schaum Series), Theory and Problems of Statistics

SEMESTER VI

NAME OF THE COURSE	DEVELOPMENT THEORY AND EXPERIENCE
CLASS	TYBA
COURSE CODE	SBAECO605-B
NUMBER OF CREDITS	4
NUMBER OF LECTURES PER WEEK	4
TOTAL NUMBER OF LECTURES PER SEMESTER	60

EVALUATION METHOD	INTERNAL ASSESSMENT	SEMESTER END EXAMINATION
TOTAL MARKS	25	75
PASSING MARKS	10	30

COURSE OBJECTIVES

CO 1.	Understand the problem of the aging population and India's population policy.
CO 2.	To explore the structural transformation process for the developing countries.
CO 3.	To make students aware about the field of RCT's as a new evolving field of research in economics. The structure of rural agricultural markets and contracts is linked to the particular problems of enforcement experienced in poor countries.
CO 4.	To sensitize students about the environmental policy debates.

COURSE LEARNING OUTCOMES:

CLO 1.	Students will be able to understand the demographic changes taking place globally
CLO 2.	A realistic view of the Agricultural sector and understanding about the emerging field of research in economics.
CLO 3.	Students will be able to explain with the help of a diagram Lewis Model, Structural change model.
CLO 4.	Students will be able to trace the trends in urbanization with reference to India.
CLO 5.	Students will be able to evaluate the policies related to the urban informal sector.
CLO 6.	Students will be able to understand the differences in the formal and informal sector activities.
CLO 7.	Students will be able to appreciate the role of migration in the process of development.
CLO 8.	Students will be able to describe the main features of the Harris- Todaro model.
CLO 9.	Students will be able to examine the relationship between economic development & environmental quality.
CLO 10.	Students will be able to analyse issues related to air pollution, groundwater exploitation & deforestation.

SYLLABUS

UNIT 1	Demography and Development
1.1	Demographic concepts; birth and death rates, age structure, total fertility rates, fertility and mortality
1.2	Demographic transitions during the process of development
1.3	Gender bias in preferences and outcomes and evidence on unequal treatment within households
1.4	Connections between income, mortality and fertility choices and human capital accumulation
UNIT 2	Structural Transformation
2.1	The Lewis model
2.2	Clark-Fisher model of structural change
2.3	Urbanization: Trends and Projections with reference to India, Urbanization and Development, Causes of urbanization, Urban informal sector, Policies for the urban informal sector
2.4	Migration and development, Economic theory of rural-urban migration: Harris-Todaro migration model.
UNIT 3	Land, Labour and Credit Market
3.1	Role of Agriculture in Economic Development, Market Failure and Agriculture
3.2	The distribution of land ownership, Land reform and its effects on productivity, Contractual relationship between tenants and landlords land acquisition
3.3	Nutrition and labour productivity
3.4	Rural credit market, Microfinance, inter-linkages between Rural Factor Markets
UNIT 4	The Environment and Development
4.1	The core of environmental problems
4.2	Rural poverty and environmental destruction
4.3	Industrialization and environmental pollution
4.4	Economic model of environmental issues: privately owned resources, common property resources
4.5	Public goods: regional environmental degradation and the free rider problem, limitations of public goods framework

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REFERENCES:

1. Debraj Ray, Development Economics, Oxford University Press,2009.
2. Partha Dasgupta, Economics: A Very Short Introduction, Oxford University Press,2007.
3. Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, Understanding Poverty, Oxford University Press,2006.
4. Amartya Sen, Development as Freedom, Oxford University Press,2000.
5. Daron Acemoglu and James Robinson, Economic Origins of Dictatorship and Democracy, Cambridge University Press,2006.
6. Michael Todaro and Stephen Smith: Economic Development,12th edition, (2015) Pearson Publication

SEMESTER VI

NAME OF THE COURSE	INTERNATIONAL TRADE, POLICY AND PRACTICE	
CLASS	TYBA	
COURSE CODE	SBAECO606	
NUMBER OF CREDITS	2.5	
NUMBER OF LECTURES PER WEEK	3	
TOTAL NUMBER OF LECTURES PER SEMESTER	45	
EVALUATION METHOD	INTERNAL ASSESSMENT	SEMESTER END EXAMINATION
TOTAL MARKS	25	75
PASSING MARKS	10	30

COURSE OBJECTIVES

CO 1.	To trace advances in the development of international trade theory.
CO 2.	To explore contemporary policy issues related to international trade.
CO 3.	To discover the issues involved in the settlement of international trade transactions & finance.

COURSE LEARNING OUTCOMES:

CLO 1.	Students will be able to explain the three theorems associated with the modern theory of trade.
CLO 2.	Students will be able to identify the contributions made by Heckscher, Ohlin, Samuelson, Stolper, Rybezynski and others to the field of international trade theory.
CLO 3.	Students will be able to prove using graphical presentation the effect of free trade on international factor prices.
CLO 4.	Students will be able to describe the effect of free international trade on factor incomes.
CLO 5.	Students will be able to trace the impact of different factor intensities on their incomes.
CLO 6.	Students will be able to explain the pattern of international trade with imperfect competition.
CLO 7.	Students will be able to analyze the effect of technological progress & economies of scale on trade patterns.
CLO 8.	Students will be able to evaluate arguments for and against free trade.
CLO 9.	Students will be able to evaluate arguments for and against protectionism.
CLO 10.	Students will be able to distinguish between the tariff and nontariff instruments of trade policy.
CLO 11.	Students will be able to analyse with the help of a diagram the economic effects of tariff.
CLO 12.	Students will be able to make relative comparison between tariff, quota, subsidies and voluntary restraints.
CLO 13.	Students will be able to argue for & against Free & Flexible Exchange Rate Regimes.
CLO 14.	Students will be able to understand the emergence of the trade blocs & working of EU, WTO & G20.
CLO 15.	Students will be able to explain the evolution of the international financial system.
CLO 16.	Students will be able to discuss the issues related to the capital account convertibility.

SYLLABUS

UNIT 1	Introduction
1.1	Inter-regional and international trade
1.2	Role of dynamic factors i.e. change in tastes, technology and role of factor accumulation
1.3	Foreign exchange rate: concepts, spot and forward rates, foreign exchange rate determination, fixed and flexible exchange rate, Interrelationship between exchange

	rate and interest rates
1.4	Exchange rate system in India, managed floating
1.5	Current and Capital Account convertibility and their impact, FEMA
UNIT 2	Emerging New International Economic Order
2.1	GATT, Uruguay Round, WTO
2.2	WTO Agreement, Dispute settlement, Mechanism, Impact of WTO on Emerging Economies and India Doha Round and implications of its failure
2.3	Emergence of Regional Free Trade Agreements (FTA), Bilateral Investment Treaty (BIT)
2.4	Double Taxation Avoidance Agreement (DTAA)
UNIT 3	International Financial Institutions and International Debt Problem
3.1	IMF, World Bank, Asian Development Bank (ADB)
3.2	New Development Bank (NDB), Asia Infrastructure Investment Bank (AIIB) and their role with special reference to India
3.3	South East Asian Crisis and Lessons for India
3.4	Global Economic Crisis, Global Financial Crisis of 2008, International Debt Problem
3.5	Emerging global Financial Architecture
UNIT 4	Role of Foreign Capital Flow
4.1	Factors determining foreign Investment, Foreign Institutional Investment (FII)
4.2	Qualified Foreign Investment (QFI), Foreign Portfolio Investment
4.3	Role of FDI in Economic Development, Factors influencing FDI inflows, Green Field and Brown Field FDI in India
4.4	Foreign Investment and Role of MNCs in India

REFERENCES:

1. Robert J Carbaugh, International Economics, South-Western Cengage Learning, USA, 2017.

2. Paul R Krugman, Maurice Obstfeld and Melitz Mark, International Economics: Theory and Policy, Princeton University, USA, 2015.
3. Dennis R Appleyard, Alfred J Field, International Economics, McGraw-Hill, USA, 2013.
4. Kindleberger Charles P., International Economics,3rd edition, R. D. Irwin, Homewood, IL, 1963.
5. Bo Sodersten and Geoffrey Reed, International Economics, 3rd Edition, Palgrave Macmillan; (May 15, 1994)

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