HSNC University Mumbai

(2022-2023)

Ordinances and Regulations

With Respect to

Choice Based Credit System

(CBCS)

For the Programmes Under

Faculty of Arts

For the Course

Economics

Curriculum – Third Year Undergraduate Programmes

Semester-V and Semester –VI

2022-23

Section-D

Faculty of Arts

Department of Economics

TYBA ECONOMICS

SYLLABUS FOR 2022-23

Preamble

The Department of Economics has strived to develop a curriculum that aims to encourage ethical, need-based, industry-endorsed and globally acceptable programmes and research.

The subject of Economics deals with consumer theory, producer theory, markets, national income, international trade, monetary policy, fiscal policy, development theories, economic thought and many more to understand individual markets as well as the aggregate economy. The curriculum will not only teach the theoretical models but it will help the students to cultivate a way of thinking that requires a critical eye and a rigorous method of logical reasoning. The subject provides a scope to analyze problems quantitatively by using a mathematical approach. Through the curriculum the students will acquire many general and specific skills which will make them adaptable to many opportunities after graduation.

The third year of the course has been divided into two semesters (V and VI).Each semester includes 6 papers with internal choices in two of the papers in each term. Students majoring in Economics will be offered 6 papers of Economics, whereas those opting for double major will be offered only the first three papers of Economics in each term.

The curriculum tries to encourage students towards self-learning. Some of the topics have been identified for them to learn through the various online resources launched by the University Grants Commission (UGC) along with the Ministry of Education. The same topics will be used for discussions using case studies. They will be assessed using short assignments based on those materials.

Thus, our curriculum in Economics will provide analytical and critical thinking tools to address challenges in the students' professional career.

1. Course Objectives:

1. To provide a sound understanding in microeconomic theory.

2. To introduce diverse concepts related to economic growth and development by giving special emphasis on structural issues related to the process of development.

3. To introduce the economics of finance.

4. To familiarise the composition, direction and consequences of international trade.

5. To acquaint students with various components of the Indian financial system.

6. To enable students understand various environmental problems and policies.

7. To think analytically and critically using logical reasoning.

8. To encourage self-learning through online component (SWAYAM).

2. Process adopted for Curriculum designing:

A team was constituted with four internal members, four alumni and three external experts to frame the syllabi. After conducting several meetings and discussions, the changes in the syllabus were introduced.

3. Salient features, how it has been made more relevant:

The current course is designed to enhance the knowledge and skill of the subject. While designing the curriculum, a well- balanced approach has been taken for all papers so as to provide a clear understanding of the subject to the learners.

The course will help the students to develop requisite skills in areas which have direct bearing on future employment prospects and meet the requirements of business, corporate sector, public services and other professional jobs.

4. Learning Outcomes: The students will be able to

1. Understand, summarize, analyse and apply the concepts of Micro and Macro Economics in their daily lives.

2. Understand the functioning of imperfect markets, game theory and general equilibrium among others.

3. Analyse the policy options related to the problems like inequality, poverty etc.

4. Appreciate basic models of corporate finance, investment and portfolio analysis.

5. Comprehend the different theories of goods and money market, exchange rate regimes

6. Analyse national and international policies of trade, financial flows.

7. Appreciate the trends that have taken place in the Indian financial sector.

8. Analyze policy options for different environmental issues.

5. Input from stakeholders:

The modifications suggested by internal and external experts as well as alumni have helped to make the syllabus more holistic and comprehensive. The value addition in the syllabus will definitely prove to be extremely relevant in the context of growing demands of an economy.

Part 2 - The Scheme of Teaching and Examination

Semester – V

Sr. No.	Choice Based Credit System	Subjects		Subject Code	Remarks
1	BA-Economics	TYBA-Economics Paper VII: Advanced Microeconomics	Theory	UH-TEC-501	
2	BA-Economics	TYBA-Economics Paper VIII: Economics of Growth and Development	Theory	UH-TEC-502	
3	BA-Economics	TYBA-Economics Paper IX: Indian Financial System	Theory	UH-TEC-503	
4	BA-Economics	TYBA-Economics Paper X: Mathematical and Statistical Techniques for Economic Analysis I/Research Methodology I	Theory	UH-TEC-504a/504b	
5	BA-Economics	TYBA-Economics Paper XI: Introduction to Econometrics/ Environmental Economics I	Theory	UH-TEC-505a/505b	
6	BA-Economics	TYBA-Economics Paper XII: History of Economic Thought	Theory	UH-TEC-506	

Semester – VI

Sr. No.	Choice Based Credit System	Subjects		Subject Code	Remarks
1	BA-Economics	TYBA-Economics Paper XIII: Advanced Macroeconomics	Theory	UH-TEC-601	
2	BA-Economics	TYBA-Economics Paper XIV: International Economics	Theory	UH-TEC-602	
3	BA-Economics	TYBA-Economics Paper XV: Financial Economics	Theory	UH-TEC-603	
4	BA-Economics	TYBA-Economics Paper XVI: Mathematical and Statistical Techniques for Economic Analysis-II / Research Methodology II	Theory	UH-TEC-604a/604b	
5	BA-Economics	TYBA-Economics Paper XVII: Theory and Practice of Econometrics/ Environmental Economics II	Theory	UH-TEC-605a/605b	
6	BA-Economics	TYBA-Economics Paper XVIII: Entrepreneurship and Small Scale Industries	Theory	UH-TEC-606	

Third year Semester-V and VI Internal and External Assessment Details

Sr. No.	Subject Code	Subject Title	Lectures Per Week (Lecture of 45 min)					Credits	Evaluation Scheme						Total Marks
			Units	S.L.*	L	T	P	s	SLE	TA	CT	Proj.	SEE	PE	
1	UH-TEC-501	Economics Paper VII: Advanced Microeconomics	4	20 %	4	0	0	4	10	05	15	10	60	0	100
2	UH-TEC-502	Economics Paper VIII: Economics of Growth and Development	4	20 %	4	0	0	4	10	05	15	10	60	0	100
3	UH-TEC-503	Economics Paper IX: Indian Financial System	3	20 %	3	0	0	3.5	10	05	15	10	60	0	100
4	UH-TEC-504a/504b	Economics Paper X: Mathematical and Statistical Techniques for Economic Analysis-I / Research Methodology I	4	20 %	4	0	0	4	10	05	15	10	60	0	100
5	UH-TEC-505a/505b	Economics Paper XI: Introduction to Econometrics/ Environmental Economics I	4	20 %	4	0	0	4	10	05	15	10	60	0	100
6	UH-TEC-506	Economics Paper XII: History of Economic Thought	3	20 %	3	0	0	3.5	10	05	15	10	60	0	100
7	UH-TEC-601	Economics Paper XIII: Advanced Macroeconomics	4	20 %	4	0	0	4	10	05	15	10	60	0	100
8	UH-TEC-602	Economics Paper XI V: International Economics	4	20 %	4	0	0	4	10	05	15	10	60	0	100
9	UH-TEC-603	Economics Paper XV: Financial Economics	3	20 %	3	0	0	3.5	10	05	15	10	60	0	100

Sr. No.	Subject Code	Subject Title	Lectures Per Week (Lecture of 45 min)					Credits	Evaluation Scheme							Total Marks
			Units	S.L.*	L	T	P	s	SLE	TA	CT	Proj.	SEE	PE		Marks
10	UH-TEC-604a/ 604b	Economics Paper XVI: Mathematical and Statistical Techniques for Economic Analysis II / Research Methodology II	4	20 %	4	0	0	4	10	05	15	10	60	0		100
11	UH-TEC-605a/ 605b	Economics Paper XVII: Theory and Practice of Econometrics/ Environmental Economics II	4	20 %	4	0	0	4	10	05	15	10	60	0		100
12	UH-TEC-606	Economics Paper XVIII: Entrepreneurship and Small Scale Industries	3	20 %	3	0	0	3.5	10	05	15	10	60	0		100
		Total						23								1200

*One to two lectures to be taken for CONTINUOUS self -learning evaluation

L: Lecture, T: Tutorials, P: Practical, Ct-Core Theory, CP-Core Practical, CT-Class Test, TA-Teacher Assessment, SLE : Self Learning Evaluation, Proj.- Project/Assignment, PE : Practical Evaluation, SEE: Semester end examination

• Lecture Duration – 50 Minutes • One Credit = 15 Classroom teaching hours

TYBA ECONOMICS

SYLLABUS FOR 2022-23

Semester V

Syllabus Information

Sr. No	Course Code	Title	Credits	Lectures
1	UH-TEC-501	**Economics-Paper VII (Advanced Microeconomics)**	**4**	**48**

Title: Advanced Microeconomics

Units	Modules	No. of Lectures
1	**MODULE I: OLIGOPOLY** 1.1 Oligopoly explain with real world examples 1.2 The Cournot model also explain with Reaction Curve, give examples 1.2 The Bertrand model - the Edgeworth model – the Chamberlin model – differentiate and give examples 1.4 The Kinked demand curve model – give real world examples. 1.5 Collusion and Cartels – give real world examples of mergers and takeovers of firm.	12
2	**Module II:GAME THEORY** 2.1 Basics of Game theory – application in real economy of Duopoly, Oligopoly and Monopolistic Competition. 2.2 Prisoner's dilemma – give real world examples of sub-optimal solutions by the competing firms. (Give example of sticky prices). Co-operative & Non-cooperative games. (cartel & collusions). 2.3 Dominant strategy equilibrium – explain with real world examples of dominant / leader firm and follower firm. 2.4 Battle of sexes game – given examples of interdependent firms 2.5 Nash equilibrium – give examples from real world 2.6 Extensive form games – game tree - Solving finite extensive form game. Give examples from oligopoly and monopolistic competitive firm.	12

3	**Module III: General Equilibrium and Welfare Economics –**	12
	4.1 General Equilibrium & Interdependence of Economy.	
	4.2 Existence of General Equilibrium, (IS-LM model in brief).	
	4.3 The Pareto Optimality Condition of Social Welfare, Marginal Conditions for Pareto Optimal Resource Allocation, Perfect Competition and Pareto Optimality	
	4.4 Kaldor- Hicks Compensation Criterion –	
	4.5 Arrow's Impossibility Theorem.	
	4.6 Applied Welfare Economics (in brief concept, Ethics, Environmental protection & social health).	
4	**Module 4**: **Information Economics** (12 Lectures)	12
	4.1 Economics of Search and Search Cost –	
	4.2 The Theory of Asymmetric Information-	
	4.3 The Market for Lemons and Adverse Selection	
	4.4 Risk Preference and Expected Utility –	
	4.5 The Problem of Moral Hazard –	
	4.6 Market Signalling –	
	4.7 Principal-Agent Problem. signalling games	
	4.8 Some ideas of Behavioural Economics	

Self-Learning Components (Unit Wise)

Module	Topic	Swayam Link
Module1	OLIGOPOLY: By Prof. Trupti Mishra	IIT Bombay	https://onlinecourses.nptel.ac.in/noc20_mg67/preview
	Cournot model ,reaction ,curves and Bertrand Mode) (Part-I) (CH_07)	
	By Prof. **Gauri Gaur Gujrat University Swayam Prabha**	https://www.youtube.com/watch?v=c51pP4aezS0

Module2	Game Theory Game Theory and Economics by Dr. Debarshi Das, Department of Humanities and Social Sciences, IIT Guwahati. For more details on NPTEL visit http://nptel.iitm.ac.in	https://nptel.ac.in/courses/109/103/109103021/ https://www.youtube.com/watch?v=a52BtWkyjl0&t=120s
Module4	General Equilibrium By Guari Gaur, Gujarat University	https://www.youtube.com/watch?v=5H63T6wvLQ4
	Welfare Economics By MIT 14.01 Principles of Microeconomics, Fall 2018 Instructor: Prof. Jonathan Gruber Dr Renuka Anup Kumar, Delhi University	https://www.youtube.com/watch?v=PC3qooaF5Xs https://www.youtube.com/watch?v=516g-8dOmMI

References:

1. Koutsoyannis, Modern Microeconomics (2003), Macmillan Press Ltd., London.

2. Mankiw, N. Gregory, Principles of Microeconomics (2016), 7 th edition, Cengage Learning, 2015

3. Mansfield, Edwin; Micro-economics: Theory & Applications, 11th edition, W.W. Norton & Company, New York, 2004.

4. Sen Anindya (2007), Microeconomics: Theory and Applications, Second edition Oxford University Press, New Delhi, 2007.

5. Salvatore, D.; Microeconomics: Theory and Applications , New Delhi Oxford, New Delhi, Oxford University Press 2017.

6. R. Gibbons (1992) : A Primer in Game Theory, Harvester Wheatsheaf

7. A. Randall, in Encyclopedia of Energy, Natural Resource, and Environmental Economics, 2013

8. Varian Hal R. (8 Edition 2019) Intermediate Microeconomics A Modern Approach, East-West Press, New Delhi.

9. Osborne, M. (2012). An introduction to game theory. Oxford University Press

10. Henderson J. M. & Quandt R.E. *Microeconomic Theory. A Mathematical Approach.* McGraw-Hill Book Company, 1958, Published online by Cambridge University Press: **17 August 2017**

Syllabus Information

Sr.No	Course Code	Title	Credits	Lectures
1	**UH-TEC-502**	**Economics Paper VIII Economics of Growth and Development**	**4**	**48**

Title: Economics of Growth and Development

The aim of this paper is to inculcate diverse concepts related to economic growth and development by giving special emphasis on structural issues related to the process of development. In order to create awareness on policy options, the pressing problems on the path of development such as inequality, poverty and technological aspects are dealt in.

Units	Modules	No. of Lectures
1	**Module 1: Meaning of Economic Growth and Development** 1.1 Concepts of Economic Growth and Development-Distinction between Economic Growth and Development 1.2 Concept of Human Development- H.D.I, G.D.I 1.3 Green GDP 1.4 Sen's Capability approach 1.5 Millennium Development Goals (MDGs)- Initiative by Indian government towards MDGs.	**12**
2	**Module 2: Theories of Economic Development** 2.1 Rostow's stages of growth; 2.2 Big Push Theory 2.3 Schumpeter's Theory of Development 2.4 Harrod - Domar Growth Model 2.5 Solow's growth model 2.6 Lewis Model of unlimited supply of labour	**12**

	2.7 Ragner Nurkse's Theory of Disguised Unemployment	
3	**Module 3: Structural Issues in Development Process** 3.1 Concept of Human Capital- Role of Education, Health and nutrition in Human Capital 3.2 Meaning and Measurement of Poverty and Inequality- Measures to eradicate poverty and Inequality 3.3 Meaning of Inclusive growth 3.4 Economics of Gender and Development: SHG and Microfinance 3.5 Migration – Urbanization- Formal and Informal Sector- Urban Informal Sector	12
4	**Module 4: Planning, Technology and Economic Development** 4.1 Concept and Role of infrastructure in Economic Development 4.2 Role of technology in Economic Development- Labour intensive versus Capital intensive technology 4.3 Schumacher's concepts of intermediate and appropriate technology 4.4 Green Technology 4.5 Meaning and Types of Economic Planning- Role of Planning in Economic Development	12

Self-Learning components (Unit wise)

Unit	Topic	SWAYAM Link
1	1.2 Human Development	https://youtu.be/PxIWLwnDGJA
2	2.6 Lewis model	https://youtu.be/XENmyrA4ZbY
3	3.1 Poverty and Inequality	https://youtu.be/2BV51w3W8oE
4	4.1 Economic infrastructure	https://youtu.be/LsvLqaxR5pM

References:

1. Todaro, Michael P. and Stephen C. Smith. Economic Development, 8e. Delhi: Pearson Education, 2015.

2. Mamoria, Joshi, Principles and practice of marketing in India, Kitab Mahal, 1979.

3. Meier, Gerald M. and James E. Rauch. Leading Issues in Economic Development, New Delhi: Oxford Univ. Press, 2011.

4. Thirlwall, A.P. Growth and Development 8e. New York: Palgrave MacMillan, 2005. 7

5. Boldwin, Economic Development: Theory, History and Policy, Willy Publishers, 1957.

6. V.K. Puri and S.K. Mishra, Indian Economy, Himalaya Publishing House, 2019

Syllabus Information

Sr. No	Course Code	Title	Credits	Lectures
1	UH-TEC-503	Economics Paper IX (Indian Financial System)	3.5	48

Title: Indian Financial System

The aim of this paper is to familiarise the students with a broad overview of the financial system of India. They will learn about the structure, trends, markets, institutions, instruments and services of the Indian Financial System.

Units	HSNC University	Number of Lectures
1	**Module 1: Indian Financial System: Structure, Trends and Turns** 1.1 Evolution, Meaning, Characteristics and components of the Financial System 1.2 Financial System and Economic Development – 1.3 Indicators of Financial Development: FR, FIR, NIR and IR 1.4 Reforms and trends/ turns in Indian financial sector: 1991-2019	10
2	**Module 2 Banking and Non-Banking in India since 1990s** 2.1 Overview of development of Banking in India 2.2 Commercial banking 2.3 Management of NPAs-Concept of Bad bank 2.4 Capital adequacy norms- Basel III 2.5 NBFI: Features, types, role, Regulation 2.6 Provident funds, Pension funds, PFRDA, Venture capital funds, Mudra bank, NBFID	14
3	**Module 3: Financial Markets in India: (14 lecs)** 3.1 Money Market: Features, Components of organized money market 3.2 Reforms in the money market 3.3 Monetary Policy Framework 3.4 Debt Market – Structure, participants and instruments, Role of intermediaries and government in debt market, Recent trends 3.5 Capital Market: Structure and Recent Developments 3.6 Role of SEBI 3.7 Interlink between Money Market and Capital Market	14
4	**Module 4: Financial Instruments and Services: (10 lecs)** 4.1 Traditional Financial Instruments: equities, debentures and bonds 4.2 Hybrid Financial instruments- floating rate bonds- zero	10

| | interest bonds- deep discount bonds- inverse float bonds- sovereign gold bonds- municipal bonds
4.3 Financial Services: Insurance, IRDA - Mutual Funds
AMFI - Credit Rating- Fintech Innovations, Cryptocurrency | |

Self-Learning Components (Unit Wise)

Module	Topic	Self-Learning Links/References
Module 1	Trends and turns in Indian financial sector	Rakesh Mohan & Partha Ray, Indian Financial Sector: Structure, Trends & Turns; IMF Working Paper (WP/17/7). https://www.imf.org> Issues > 2017/01/20 and various issues of RBI Annual Report 2016-17 onwards
Module 3	Capital Market and	https://youtu.be/o7zzbM0DqJc Swayamprabha Ch 07: Kautilya: CEC/UGC: Economics, Commerce, Finance: EMRC, Gujarat University Ahmedabad
	Debt Market	https://youtu.be/4RI2RIXU2iQ Swayamprabha Ch 07: Kautilya: CEC/UGC: Economics, Commerce, Finance: EMRC, Gujarat University Ahmedabad
Module 4	Credit Rating	https://youtu.be/uzODlRyqeSg Swayamprabha Ch 07: Kautilya: CEC/UGC: Economics, Commerce, Finance: EMRC, Gujarat University Ahmedabad
	Fintech Innovations	Report of the Working Group on Fin Tech and Digital Banking, RBI, 2018 https://youtu.be/f9Dv20JDmR4 UGC-HRDC University of Kerala
	Cryptocurrency in India	https://youtu.be/LeTEnPxE3XQ UGC-HRDC University of Kerala

References:

1. Pathak, Bharati, The Indian Financial System –Markets, Institutions, and Services, Pearson

Education, New Delhi, 2018 5e.

2. Bhole, L. M, J Mahakud, Financial Institutions and Markets, Growth and Innovation, Tata McGraw-Hill, New Delhi, 2017.
3. Khan, M.Y, Financial Services, Tata McGraw Hill, New Delhi, 2019 10e.
4. Dua Pami, (June 2020), 'Monetary Policy framework in India', Indian Economic Review Published online: 23 June 2020
5. Reserve Bank of India (various issues) Report on Currency and Finance, RBI, Mumbai.
6. Rakesh Mohan & Partha Ray, Indian Financial Sector: Structure, Trends & Turns; IMF
Working Paper (WP/17/7). https://www.imf.org> Issues > 2017/01/20
7. Dutta Abhijit, Indian Financial System, Excel Books, Delhi, 2012.

Syllabus Information

Sr. No	Course Code	Title	Credits	Lectures
1	UH-TEC-504a	**Economics Paper X (MATHEMATICAL AND STATISTICAL TECHNIQUES FOR ECONOMIC ANALYSIS-I)**	4	48

Title: MATHEMATICAL AND STATISTICAL TECHNIQUES FOR ECONOMIC ANALYSIS- I

This course will equip the students to describe, interpret and understand the data and draw conclusions. With the knowledge of set theory, basics of differentiation, central tendency and measures of dispersion students will be able to appreciate the beauty of economics in quantitative terms.

Units	Modules	No. of Lectures
1	**Module 1: Set Theory, Graphs and Derivatives** **A: Set Theory,** •Set-elements, basic operations, Functions and Graphs • Demand and Supply functions, Saving and Investment functions, Consumption Function, Market Equilibrium **B: Derivatives and their economic applications** • Derivatives • Higher order derivatives • Maxima and minima • Optimisation of economic functions	14

2	**Module 2: Linear Algebra** • Matrices and basic operations on matrices • Rank of a matrix • Inverse of a matrix • Cramer's rule • Input-Output Analysis and policy implications • Linear Programming Problem: Formulation and graphical solution	12
3	**Module 3: Descriptive Statistics and graphing techniques for presenting data** • Concept of primary and secondary data along with tabulation and graphs • Measures of central tendency (only arithmetic-mean, median, and mode). • Absolute and relative measures of dispersion (range, quartile deviation, mean deviation and standard deviation) with simple applications. • Measures of skewness and kurtosis. • Lorenz Curve	12
4	**Module 4: Elementary Probability Theory** • Sample space and events • Mutually exclusive, exhaustive and complementary events • Conditional probability • Binomial probability distribution • 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	10

Self-Learning components (Unit wise)

Module	Topic	Self Learning Link/References
Module 2	Matrices and basic operations on matrices	https://youtu.be/cfPL1hxDJW8 https://youtu.be/MitjVG198CI https://youtu.be/A4ZFGkAaA_U https://youtu.be/8M7qHQ_hzKY https://youtu.be/7zaTfh1T2C8 https://youtu.be/YGF1ny1xGAc
Module 3	Concept of primary and secondary data	Kothari, C.R., Research Methodology: Methods and Techniques, New Age International Publishers, New Delhi, 2008.
Module 4	• Sample space and events • Mutually exclusive, exhaustive and complementary events	https://youtu.be/cRKP56p9HJs https://youtu.be/wuyd6m6Ql4c

References:
1. Chiang A.C: Fundamental Methods of Mathematical Economics, 3rd Edition, McGraw Hill, 1984.
2. Dowling Edward T: Introduction to Mathematical Economics, Schaum Outline Series in Economics, Tata McGraw -Hill, New Delhi, 2004.
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 2014
5. Kothari, C.R., Research Methodology: Methods and Techniques, New Age International Publishers, New Delhi, 2008.
6. Lerner Joel J and P. Zima: Theory and Problems of Business Mathematics, McGraw Hill, New York, 1986.
8. Sancheti D.C. and V.K. Kapoor: Statistics-Theory, Methods and Applications, S. Chand, New Delhi, 2014

Syllabus Information

Sr. No	Course Code	Title	Credits	Lectures
1	UH-TEC-504b	Economics Paper X (RESEARCH METHODOLOGY-I)	4	48

Title: RESEARCH METHODOLOGY-I
The central focus of this course is an introductory study of the concepts, principles and methods of economic research based on quantitative and qualitative data. The course will equip the students with the basic understanding of the research methodology and provide an insight into the application of modern analytical tools and techniques for the purpose of economic decision making. The course will provide students an opportunity to learn how to collect and analyze primary and secondary data.

Units	Modules	No. of Lectures
1	**Module 1: Introduction to Concept of Research** • Nature, Scope & Purpose of social research • Basic assumptions of research • Significance of social sciences research • Objectives of social sciences research • Types of research: Basic, applied research, Pure, Descriptive, Analytical, Empirical • Limitations and Difficulties in social science research • Ethical Issues in social science research	10

2	**Module 2: Elements of Research Methodology** Steps in Research process: • Identification, selection and formulation of research problem – Sources of research problem – criteria of a good research problem • Review of literature • Formulation of hypothesis • Research Design: Definition, Concepts, and types • Collecting and analysing the data • Interpretation and report writing	14
3	**Module 3: Sources of Data and Sampling** I. Types of data sources: Primary and Secondary, choice between primary and secondary data • Primary data-Meaning and Collection methods: Observational method, Interview technique, Design of Schedule and Questionnaire, Survey method and Field Visits, Case Study as a method • Secondary data: Meaning, sources, advantages, Relevance, limitations II. Sampling Technique: Census and sample survey- Essentials of a good Sampling - Advantages and limitations of sampling, Methods of sampling: Random sampling and Non-random sampling-Sampling and Non-sampling errors - Sample size – selecting an appropriate sampling technique	14
4	**Module 4: Processing and Analysis of Data** • Classification, Tabulation and Graphical presentation of socio-economic data • Measures of Central Tendency – Measures of Variation: absolute and relative measures – Quartile deviation, standard deviation, coefficient of variation- Skewness: meaning and Measurement (Karl Pearson's and Bowley's methods), Kurtosis	10

Self-Learning components (Unit wise)

Module	Topic	Self Learning Link/References
Module 1	Nature, Scope, significance & Purpose of social research	https://youtu.be/D7q1ruSxj4A
Module 2	Identification, selection and formulation of research problem	https://youtu.be/hDDKhzHpju0
Module 3	Concept of primary and secondary data	Kothari, C.R., Research Methodology: Methods and Techniques, New Age International Publishers, New Delhi, 2008.

References:

1. Bhandarkar P.L., (1994), Samajik Sanshodhan Padhati, Himalaya Publication, New Delhi.
2. Dawson, Catherine (2002), Practical research methods, UBS Publishers, New Delhi.
3. Ghosh, B.N. (1992), Scientific methods and social research, Sterling Publishers Pvt. Ltd, New Delhi.
4. Gupta S P, (1987), Statistical methods, Sultan Chand and Sons, New Delhi.
5. Kothari R.C. (2008), Research methodology, methods and techniques, New Age International Publishers, New Delhi.
6. Krishnaswamy O.R.(1993), Methodology of research in social sciences, Himalaya publishing House, Mumbai.

INTRODUCTION TO ECONOMETRICS: PAPER XI

SEMESTER V

Syllabus Information

Sr. No.	Course Code	Title	Credits	Lectures
1	UH-TEC-505a	**Economics Paper XI** **INTRODUCTION TO ECONOMETRICS**	**4**	**48**

Preamble:

The objective of this course is to impart a basic understanding of econometrics. At the same time, it will enhance the student's ability to apply the theoretical techniques to the problems of the real world. Topics like forecasting have been introduced to impart this practical orientation.

Module1: Idea of a random variable:

Concept of a random variable: Discrete and continuous - Expected values of a random variable-Variance of a random variable-Discrete random variables: Bernoulli, Binomial, Poisson- Continuous random variables: The normal distribution.

Module2: Jointly distributed Random variables:

Joint and marginal distributions for bivariate random variables - Conditional probability-Conditional mean and variance–Covariance-Correlation and Partial correlation-Central limit theorem (without proof).

Module 3: Statistical Inference:

Point and interval estimation- The Z distribution-The Null and Alternate hypotheses and significance testing for mean using Z distribution when population variance is known

- The chi-square distribution and testing for sample variance with known population variance - The F distribution and comparing sample variances - The t distribution and hypothesis tests when population variance in unknown.

Module 4: Regression Analysis:

Two variable regression model - The concept of the PRF - Classical assumptions of regression - Derivation of the OLS estimators and their variance - Properties of OLS estimator sunder classical assumptions, Gauss-Markov Theorem (without proof)–Tests of Hypothesis, confidence intervals for OLS estimators - Measures of goodness of fit: R square and its limitations, adjusted R square and its Limitations.

Self learning by students: Econometrics and Economic Data · **R Programming** for Beginners -------**Introduction to R – YouTube (https://www.youtube.com/watch?v=cz4Rv3ebR14)**

Self-Learning components (Unit wise)

Unit	Topic	SWAYAM Link
MODULE1	**Prof. Siva Athreya, Indian Statistical Institute** WEEK 6 TO 12. Lec 1: Probability space and their properties, Random variables **By Prof. Siddharth Pratim Chakrabarty, Dpt. of Mathematics, IIT GUWAHATI**	https://onlinecourses.nptel.ac.in/noc22_ma27/preview Probability –I with Examples Using R https://www.youtube.com/watch?v=wjmt7QWvg8g Course URL: https://swayam.gov.in/nd1_noc20_ma36/... Dr. Siddhartha Pratim Chakrabarty Dept of Mathematics IIT Guwahati
MODULE2	Probability Theory	NPTEL visit http://nptel.ac.in.

	and Applications by Prof. Prabha Sharma, Department of Mathematics, **IIT** Kanpur.	https://www.youtube.com/watch?v=nvMQzz80vX8
MODULE 3	Statistical Inference, IIT Delhi Prof. Nilladri Chaterjee	https://nptel.ac.in/courses/111102112
MODULE4	Regression Analysis, IIT Kharagpur Dr. Soumen Maity	https://nptel.ac.in/courses/111105042
	Regression Analysis and Forecasting, IIT Kanpur Prof. Shalabh	https://nptel.ac.in/courses/111104098

References:

1. Damodar N. Gujarati, Basic Econometrics, McGraw-Hill, Delhi, 2017.
2. Murray R. Spigel Schaum"s Outline of Theory and Problems of Statistics, McGraw-Hill,1999
3. Jeffrey M. Wooldridge, Econometrics, Cengage Learning, India Edition, 2012.
4. Damodar Gujarati, Econometrics by Example, Palgrave Macmillan, 2011.
5. Stock J. Watson, Introduction to Econometrics, Prentice Hall, New York, 2017.

Sr.No	Course Code	Title	Credits	Lectures
1	UH-TEC-505b	Economics Paper XI Environmental Economics I	4	48

Title: Environmental Economics I

The paper is designed in a way to inculcate diverse concepts related to environment and development. In order to create awareness on policy options, the pressing environmental problems and their causes and policy implications are dealt with in this paper.

Units	Modules	No. of Lectures
1	**Module1: Introduction to Environmental Economics** 1.1Environmental Economics: Nature, Significance and Scope 1.2Environment and the economy; Environmental Kuznets Curve 1.3Common resources, externalities and property rights; Coase Theorem 1.4Rio Declaration and Agenda 21 programme of action for sustainable development	12
2	**Module 2: The Design and Implementation of Environmental Policy** 2.1Criteria for evaluating environmental policies; Tools of Environmental Policy: Standards, Pigovian taxes/effluent fees, carbon tax, quotas/tradable permits; Choice between taxes and quotas 2.2Environmental Policy: Regulation and Implementation 2.3 Environmental Analysis: Benefit-Cost Analysis	12
3	**Module 3: Measuring Benefits of Environmental Improvements** 3.1 Economic value of Environment: Use and Non-use values 3.2 Measurement methods of environmental value: Market based and Non-market based methods; Contingent Valuation Method; Travel Cost Method; Hedonic Price Method	12

4	**Module 4: Global Environmental Issues**	12
	4.1 Trade and environment-Overview of trans-boundary environmental problems-Global Warming - Climate Change - Energy Crisis	
	4.2 Challenges of urbanization	
	4.3 International environmental agreements.	

Self-Learning components (Unit wise)

Unit	Topic	SWAYAM Link
1	1.1 An introduction to Environmental Economics	https://youtu.be/DXwUM_zjzls
2	2.1 Pigovian fees	https://youtu.be/3MPXFYGTc5Y
3	3.2 Hedonic Price method	https://youtu.be/gg1glszcEaQ
4	4.1 Climate change and Global warming	https://youtu.be/ktgbsHXAIU0

References:

1. Barry C. Fields: Environmental Economics: An Introduction, McGraw Hill International Edition, 7th ed, 2017.

2. Bennear, Lori Snyder, and Cary Coglianese (2004), Evaluating Environmental Policies, KSG Faculty Research Working Paper Series RWP04-049, USA.

3. Charles Kolstad : Environmental Economics, Oxford University Press, New York, 2nd ed, 2010.

4. Hanley Nick, Shogren Jason and White Ben: Introduction to Environmental Economics, Oxford University Press, 2nd ed, 2013.

5. Mickwitz, Per. (2003). A Frame work for Evaluating Environmental Policy Instruments Context and Key Concepts. Evaluation.

6. Smith Stephen: Environmental Economics: A very Short Introduction, 1st Edition, Oxford University Press, New York, 2011.

Sr. No	Course Code	Title	Credits	Lectures
1	UH-TEC-506	TYBA- Economics Paper XII: History of Economic Thought	3.5	48

Course Objective:

The very purpose of this course is to provide information about the biography and contribution of the most influential economists who influenced the economic fraternity and to whom we are obliged to for shaping up the economic thought process as well as latest contributors in the field of economics.

Units	Modules	No. of Lectures
1	**Module 1: Classical Economics** 1.1 Mercantilism and Physiocracy: Introduction 1.2 Adam Smith: Liberalism, Division of Labour and Theory of Value 1.3 David Ricardo: Rent Theory, Wage Theory and theory of value 1.4 Karl Marx: Surplus Value and Scientific Socialism.	12
2	**Module 2: Neo-Classical Economics** 2.1 Alfred Marshall: Ideas of consumer's surplus and representative firm 2.2 External and internal economies of scale, economies of scope, quasi rent. 2.3 Schumpeter: Economic Development and Innovation 2.4 Pigou: Welfare economics	12
3	**Module 3: Keynesian /Post Keynesian Ideas and Trade Cycles** 3.1 Multiplier and accelerator and their interaction 3.2 Employment Theory- Money Wage Rigidity Model 3.3 Trade Cycle – Keynes, Kaldor and Hayek's Theory of Trade Cycle 3.4 Stagflation	12
4	**Module 4: Nobel Prize Winners in Economics** 4.1 Dr. Amartya Sen (1998) 4.2 Joseph Stiglitz (2001) 4.3 Dr. Abhijeet Banerjee (2019) 4.4 Nobel Prize winners of the current year/ past year	12

Self-Learning components (Unit wise)

Module	Topic	Self Learning Link/References
Module 1	Scientific Socialism	https://www.youtube.com/watch?v=7IR1BGV-cNA
Module 2	Economies of Scope	https://www.youtube.com/watch?v=Foywy6ghIxQ
Module 3	Stagflation	Ahuja, H. L. (2011). *Macroeconomics*. S. Chand Publishing. https://www.youtube.com/watch?v=YRFX1y9-e_4

Module 4	Nobel Prize Winner of the current year/ past year	https://www.nobelprize.org/prizes/economic-sciences/

References:

1. Roll, E, A History of Economic Thought, Faber Landon, 1973.

2. Dasgupta A. K, Epochs of Economic Theory Oxford University Press. New Delhi, 1985.

3. Ghosh and Ghosh: Concise History of Economic Thought, Himalaya Publishers.

4. Ajit K. Dasgupta, A History of Indian Economic Thought, (1993) Routledge London and New York- Primary Reference

5. Encyclopedia of Nobel Laureate, Ed's, (2002) R. Kapila & A. Kapila, Academic Foundation.

6. Howard R. Vane, Chris Mulhearn - The Nobel Memorial Laureates in Economics_ An Introduction to Their Careers and Main Published Works-Edward Elgar Publishing (2005)

7. History of Economic Thought Lecture Series, IIT Madras, NPTEL Prof. S. S. Sivakumar https://nptel.ac.in/courses/109106058

TYBA ECONOMICS

SYLLABUS FOR 2022-23

Semester – VI

Syllabus Information

Sr. No	Course Code	Title	Credits	Lectures
1	UH-TEC-601	**Paper XIII: Advanced Macroeconomics**	**4**	**48**

Title: Advanced Macroeconomics

Units	Modules	No. of Lectures
1	**Module 1:** The Goods Market in the Open Economy 1.2 Trade Balance and its implications for GDP calculations; 1.3 Export and Import Functions; 1.4 The Real Exchange Rate and why it matters; 1.5 Why equilibrium GDP is consistent with a trade imbalance; 1.6 Fiscal and Exchange Rate Policy with a Fixed Exchange Rate	**12**
2	**Module 2:** Money/Financial Markets and Mundell-Fleming 2.1 The LM equation for the open economy; 2.2 Uncovered Interest Parity and its implications for exchange rate determination; 2.3 The combined IS/LM/UIP model; 2.4 Fiscal and Monetary Policy under Fixed and Flexible Exchange Rates; 2.5 The Mundell-Fleming trilemma	**12**
3	**Module 3:** Exchange Rate Regimes & Exchange Rate Crises 3.1 The choice of regime, Fixed or Flexible; 3.2 The spectrum of arrangements from Hard Peg at one end to Fully Floating at the other; 3.3 Why the Balance of Payments must always balance under Floating Exchange Rates but need not balance under a Fixed or Managed Exchange Rate regime; 3.4 The operational aspects of fixing; How a fix might come apart; 3.5 Exchange Rate crises; The relation between Exchange Rate crises and other kinds of crises (banking crises, financial crises, etc.) 3.6 Crypto Currency	**12**
4	**Module 4:** International Monetary History, 1900-present 4.1 The Gold Standard; 4.2 The Inter-War Period and the Great Depression; 4.3 The key	**12**

issues debated at Bretton Woods and the system that emerged as a result of those debates;
4.4 1971 and the collapse of the Bretton Woods system;
4.5 Fixing in Europe via ERM, and the Dollar Standard elsewhere;
4.6 The Maastricht Treaty and preparations for the Euro;
4.7 The Global Financial Crisis and its consequences for the Euro;
4.8 The Euro Crisis;
4.9 Chinese ambitions in the present day
4.10 Asia Infrastructure Investment Bank (AIIB)
4.11 Asian Development Bank (NDB)
4.12 New Development Bank (NDB)
4.13 **Macro economic implications of the COVID-19 pandemic)**

Self Learning Components (Unit Wise)

Module	Topic	Swayam Link
Module 1	Macro Economics by Prof. Surajit Sinha, Department of Humanities and Social Sciences, IIT Kanpur. For more details on NPTEL visit http://nptel.ac.in	https://www.youtube.com/watch?v=UlRNHEMSGQE&t=1914s http://web.mit.edu/14.02/www/S05/Ch19.pdf
Module 2	Macro Economics by Prof. Surajit Sinha, Department of Humanities and Social Sciences, IIT Kanpur. For more details on NPTEL visit http://nptel.ac.in	https://www.youtube.com/watch?v=KzYSVg3heqI Mod-01 Lec-13 Lecture 13
Module 3	EXCHANGE RATE by Prof. A. K. Mishra IIT KHARAGPUR	https://nptel.ac.in/courses/110/105/110105057/
Module 4	Global Crises by Dr Y V Reddy	http://www.yvreddy.com/global-crisis-recession-and-uneven-recovery/

References

1. Blanchard, Oliver; Macroeconomics 2017 (7th edition), Pearson education, New Delhi, India.
2. Dornbusch R S, Fischer and R Startz; Macroeconomics, 8e Tata Mc Grow Hill, New Delhi 2013.
3. Froyen, R. T.; Macroeconomics : Theory and Policy, 10E, Pearson Education Asia, Delhi 2013.
4. Mankiw, Gregory; Macroeconomics, 10e, Worth Publishers, New York, 2019.
5. Salvatore, D.; International Economics, Printice Hall, New York, 2013 .
6. Robert Feenstra& Alan Taylor, International Macroeconomics, 2nd ed, 2014
7. Yannis Varoufakis, The Global Minotaur, 2015
8. www.adb.org>who-we-are
9. *https://www.mckinsey.com* › risk › our-insights › covid.

Syllabus Information

Sr. No	Course Code	Title	Credits	Lectures
1	UH-TEC-602	Economics-Paper XIV (International Economics)	4	48

Title: International Economics

The aim of this paper is to develop a systematic exposition of models which explain the composition, direction, and consequences of international trade, and the determinants and effects of trade policy. It provides an analytical account of the causes and consequences of the rapid expansion of international financial flows in recent years.

Units	Modules	No. of Lectures
1	**Module 1: Introduction to Trade Theories** 1.1 Meaning, scope and importance of International Trade- Difference between Internal and International Trade 1.2 Adam Smith's Theory of International Trade - Ricardian theory of comparative cost difference, Haberler's theory of Opportunity Cost 1.3 Heckscher- Ohlin Theory 1.4 Leontief's Paradox 1.5 Krugman's Model	12
2	**Module 2: Balance of Trade and Balance of Payment** 2.1 Concepts of Terms of Trade(Net barter, Gross barter and Income terms of trade) 2.2 Meaning and difference between Balance of Trade (BOT) and Balance of Payment (BOP) 2.3 Purchasing Power Parity theory 2.4 Law of Reciprocal Demand-Marshall-Edgeworth Offer curves, Gains from trade 2.5 Case for and against Free Trade and Protection policy	12

3	**Module 3: Foreign Exchange Market** 3.1 Meaning and Functions of Foreign Exchange Market-Exchange rate determination, Factors influencing foreign exchange rate-Managed Flexibility-SWAP Market, Components of foreign exchange reserves 3.2 Foreign Aid Vs Foreign Trade 3.3 FDI and MNCs	12
4	**Module 4: International Economic Institutions and Economic Integration** 4.1 IMF, World Bank - Role and functions 4.2 WTO-Objectives, Functions and Agreements with respect to TRIPS,TRIMS, GATS, AoA 4.3 Forms and objectives of Economic Integration-Cartels-Trade Blocs, ASEAN- European Union (EU), Brexit, NAFTA and SAARC.	12

Self-Learning components (Unit wise)

Unit	Topic	SWAYAM Link
1	1.3Heckshcher- Ohlin Theory of International Trade	https://youtu.be/2IcnxPSvtps
2	2.2 Balance of payment	https://youtu.be/VgQQkNcRsYc
3	3.1 Exchange rate	https://youtu.be/DcmLvmM5nak
4	4.2 WTO Agreements	https://youtu.be/oC8njlYG21U

References:

1. Appleyard Dennis and Alfred j Field, Jr, International Economics, 2001, 4th Edition, Tata McGraw-Hill Education Private Limited.

2. Cherunilam Francis, International Economics, 2009, 5th Edition, Tata McGraw-Hill Education Private Limited, New Delhi.

3.Krugman Paul , Maurice Obstfeld, and Marc Melitz, International Economics: Theory and Policy, Addison-Wesley (Pearson Education Indian Edition), 10th edition, 2017.

4. Melitz M. and Trefler D., Gains from Trade When Firms Matter, Journal of Economic Perspectives, Spring 2012.

5. Salvatore Dominick, International Economics: Trade and Finance, John Wiley, 11th edition, 2014.

6. Bo Sodersten and Geofrey Reed, International Economics, 3 edition, Palgrave Macmillan,1994.

Syllabus Information

Sr. No	Course Code	Title	Credits	Lectures
1	UH-TEC-603	Economics-Paper XV (Financial Economics)	3.5	48

Title: Financial Economics

This course will introduce the students to the economics of Finance. The students will learn the basic models of investment and portfolio analysis, CAPM model, derivatives and elementary corporate finance.

Units	Modules	No. of Lectures
1	**Module1: Investment & portfolio Analysis** 1.1 Basic theory of interest, discounting & present value; internal rate of return, evaluation criteria, 1.2 Fixed income securities; bonds prices & yields. 1.3 Structure of interest rate, yield curves, spot & forward rates. Portfolio of assets, random asset returns, Mean variance portfolio analysis, Markowitz Model.	12
2	**Module 2:CAPM** 2.1 Two fund theorem, The capital Market line, the CAP Model 2.2 The beta of an asset & of a portfolio 2.3 Security market line, 2.4 CAPM model in investment & pricing formula.	10
3	**Module 3: Derivatives** 3.1 Meaning, functions & types of derivatives, 3.2 Participants of derivatives market- hedgers, speculators, arbitrageurs, 3.3 Future pricing- Cost of Carry model, stock index futures, interest	16

	rate futures, futures for hedging, 3.4 Options: call & put options, Option trading strategies - spreads, straddles, strips & straps, strangles, Pricing of Options – Black Scholes Model	
4	**Module 4: Corporate Finance** 4.1 Patterns of corporate financing: stock, debt, preferences, convertibles. 4.2 Capital structure & the cost of capital 4.3 Dividend policy, the Modigliani –Miller theorem	10

Self-Learning components (Unit wise)

Module	Topic	Self Learning Link/References
Module 1	Fixed Income Securities	David Luenberger, Investment Science, Oxford University Press, 1998.
Module 3	Derivatives: Meaning, functions, types	https://youtu.be/5SjNpTpT5eg Swayam CEC https://drive.google.com/file/d/1Mt_ikD5BTK63qotZ_WZFtuvKZdMKMTA_/view?usp=sharing
Module 4	Patterns of corporate Finance	Richard Brealey and Stewart Myers, Principles of Corporate Finance, McGraw Hill, 2011 (Tenth edition). Chapter on 'An overview of Corporate Financing'

References:
1. David Luenberger, Investment Science, Oxford University Press, 1998.
2. Hull John C, Options, Futures and other derivatives, Pearson Education, 2005.
3. Thomas Copeland, J. Fred Weston and Kuldeep Shastri, Financial Theory and Corporate Policy, Prentice Hall, 2003.
4. Richard Brealey and Stewart Myers, Principles of Corporate Finance, McGraw Hill, 2011 Tenth edition.
5. Stephen Ross and Bradford Jordan, Fundamentals of Corporate Finance, McGraw Hill, 2005.
6. William Sharpe, Gordon Alexander and J. Bailey, Investment, Prentice Hall of India, 2003.

Syllabus Information

Sr.No	Course Code	Title	Credits	Lectures
1	UH-TEC-604a	Economics Paper XVI (MATHEMATICAL AND STATISTICAL TECHNIQUES FOR ECONOMIC ANALYSIS-II)	4	48

Title: MATHEMATICAL AND STATISTICAL TECHNIQUES FOR ECONOMIC ANALYSIS- II

This paper will equip the students with analyzing skills using mathematical and statistical techniques. Economic analysis and interpretation of data cannot be carried out in the absence of knowledge of suitable techniques like partial differentiation, Integration, correlation, regression and time series.

Units	Modules	No. of Lectures
1	**Module1: Techniques and applications of partial derivatives** • Functions of several variables and partial derivatives • Second order partial derivatives • Optimisation of multivariable functions • Constrained optimisation with Lagrange multiplier and its economic interpretation. • Marginal productivity, Income and price elasticities of demand • Homogeneous production functions and returns to scale • Cobb-Douglas production function	14
2	**Module 2: Integral Calculus** • Integration and Definite integral; area under the curve • Economic applications • Present value of cash flows (present value of a sum to be received in future and present value of a stream of future income) • Consumer's and Producer's Surplus • Learning curve	12
3	**Module 3: Correlation and Regression** • The meaning and significance of Correlation; Scatter plot of Bivariate Distributions; Correlation and Causation • Karl Pearson's coefficient of correlation • Spearman's rank correlation coefficient • Simple regression analysis- Method of Least Squares and Regression Lines • Regression Coefficients • Relationship between correlation coefficients and regression	12

| 4 | **Module 4: Index Numbers and Time Series**
 • Simple and composite index numbers
 • Construction, uses and problems of index numbers
 • Laspeyre's, Paasche's and Fisher's Index numbers
 • Cost of living index numbers
 • Splicing, deflating and base shifting
 • Components of time series
 • Estimation and forecasting of trend by the Least Squares Method | 10 |

Self-Learning components (Unit wise)

Module	Topic	Self Learning Link/References
Module 1	Cobb-Douglas production function	https://youtu.be/gN_HWns4PWI
Module 2	Consumer's and Producer's Surplus	https://youtu.be/Yje0yyzeVSA https://youtu.be/X6ujFNCx5ME
Module 3	Measures of coefficient of correlation	https://youtu.be/gHv0tcn_E-Q
Module 4	Components of time series	https://youtu.be/KWs5Xc5c5E0

References:
1. Chiang A.C: Fundamental Methods of Mathematical Economics, 3rd Edition, McGraw Hill, 1984.
2. Dowling Edward T: Introduction to Mathematical Economics, Schaum Outline Series in Economics, Tata McGraw -Hill, New Delhi, 2004.
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 2014
5. Kothari, C.R., Research Methodology: Methods and Techniques, New Age International Publishers, New Delhi, 2008.
6. Lerner Joel J and P. Zima: Theory and Problems of Business Mathematics, McGraw Hill, New York, 1986.
8. Sancheti D.C. and V.K. Kapoor: Statistics-Theory, Methods and Applications, S. Chand, New Delhi, 2014

Syllabus Information

Sr. No	Course Code	Title	Credits	Lectures
1	UH-TEC-604b	Economics Paper XVI RESEARCH METHODOLOGY II	3	48

Title: RESEARCH METHODOLOGY- II

This paper is designed to strengthen the critical thinking in conducting economic research and to learn the various analytical tools and methods in research. The students will learn about correlation, regression, time series, index numbers, formulating and testing of hypothesis and the techniques research report writing

Units	Modules	No. of Lectures
1	**Module 1: Statistical applications in research** • Methods of studying Correlation- measurement of simple correlation: graphic method: scatter diagram - coefficient of correlation - Karl Pearson and rank correlation interpretation of $r = \pm 1$ • Linear Regression analysis: meaning, regression lines, regression coefficients, regression equations, relationship between correlation and regression • Analysis of Time Series – components –trend analysis- moving averages (3, 4 and 5 yearly)- method of least square	15
2	**Module 2: Index numbers** Meaning – classification – problems encountered while constructing index numbers- uses and limitation of index numbers Methods of constructing index numbers: • Simple index: i) aggregate method ii) simple average of relatives method • Weighted index: Laspeyer's, Paache's and Fisher's index – weighted average of relatives method • Chain based index – concepts of Base shifting, splicing, and deflating • Consumer price index: meaning, need and construction – methods: aggregate expenditure method and family budget method	15
3	**Module 3: Hypothesis formulation and Hypothesis Testing** • Definition and functions of hypothesis –Criteria of workable hypothesis – forms and sources of hypothesis • Concepts in Testing of Hypothesis: Universe / Population, parameter and statistic, Null and Alternative Hypotheses, Levels of Significance, critical region, Type I and type II errors –Student t-test	10

4	**Module 4: Interpretation and Research Report Writing** Interpretation: Meaning, Significance, Technique, Precautions Research Report: Meaning, Significance, Steps in writing research report, layout, Types of research report, Mechanics.	10

Self-Learning components (Unit wise)

Module	Topic	Self Learning Link/References
Module 1	Measures of coefficient of correlation	https://youtu.be/gHv0tcn_E-Q
Module 3	Hypothesis formulation	https://youtu.be/mllugH1GI7M
Module 4	Research Report: Organization and Style	https://youtu.be/cCbmNwvdDKc

References:
1. Bhandarkar P.L., (1994), Samajik Sanshodhan Padhati, Himalaya Publication, New Delhi.
2. Dawson, Catherine (2002), Practical research methods, UBS Publishers, New Delhi.
3. Ghosh, B.N. (1992), Scientific methods and social research, Sterling Publishers Pvt. Ltd, New Delhi.
4. Gupta S P, (1987), Statistical methods, Sultan Chand and Sons, New Delhi.
5. Kothari R.C. (2008), Research methodology, methods and techniques, New Age International Publishers, New Delhi.
6. Krishnaswamy O.R.(1993), Methodology of research in social sciences, Himalaya publishing House, Mumbai.

Syllabus Information

Sr. No	Course Code	Title	Credits	Lectures
1	UH-TEC-605a	**Economics Paper XVII THEORY AND PRACTICE OF ECONOMETRICS**	**3**	**48**

Preamble:

The paper is aims to help students understand the art of model building. It focuses onbuildingtheappropriatemodelandtestingitstatisticallyandtoapplyittothepracticalproblemsinf orecasting and analysis.

Module1: Failure of Classical Assumptions

Multi-collinearity and its implications -Auto-correlation: Consequences and Durbin-Watson test-Heteroskedasticity: Consequences and the Goldfeld-Quandt test.

Module2: Econometric Model Specification:

Identification: Structural and reduced form - Omitted Variables Bias- Errors in measurement- Endogeneity and Bias.

Module3: Forecasting:

Forecasting with a) moving averages b) linear trend c) exponential trend-CAGR-Forecasting with linear regression-Classical time series decomposition-Measures of forecast performance: Mean Square Error and Root Mean Square Error -Limitations of econometric forecasts.

Module4: Linear Programming:

Linear programming:- Dual of a linear programming problem, Simplex method, Transportation.

Self learning by student: https://www.youtube.com/watch?v=fi6aKSaHkjY
An overview of Python tools for Economists - YouTube

Self-Learning components (Unit wise)

Unit	Topic	SWAYAM Link
Module1	Econometric Methods By Dr. S. Pushparaj | School of Economics, Madurai Kamaraj University, Madurai, Tamil Nadu.	https://onlinecourses.swayam2.ac.in/cec20_hs14/preview
Module2	Introduction to Econometrics By Prof. Sabuj Kumar Mandal | IIT Madras	https://onlinecourses.nptel.ac.in/noc22_hs66/preview
Module3	Linear Regression Analysis & Forecasting, IIT Kanpur, Prof. Shalabh	https://nptel.ac.in/courses/111104098
Module 4	Lecture Series on Fundamentals of Operations Research by Prof.G.Srinivasan, Department of Management Studies, IIT Madras. For more details on NPTEL visit http://nptel.ac.in Optimization from fundamentals By Prof. Ankur A. Kulkarni | IIT Bombay	https://www.youtube.com/watch?v=qxls3cYg8to https://onlinecourses.nptel.ac.in/noc21_me10/preview

References:

1. Damodar N. Gujarati, Basic Econometrics, McGraw-Hill, Delhi, 2017.
2. Kapoor V. k. (2013), Operations Research Problems & Solutions, Sultan Chand & sons.
3. Lipschutz (Schaum Series), Theory and Problems of Statistics.
4. Wooldridge Jeffery M., Introductory Econometrics: A Modern Approach 6th edition, Cengage Learning, USA, 2016.
5. Stock James H. and Watson Mark W., Introduction to Econometrics, Updated 3rd Edition, Global Edition, Pearson Education Limited, 2015.
6. Makridakis Spyros and Steven C Wheelright, Forecasting Methods and Applications, Willey Publications, 2008.

Sr.No	Course Code	Title	Credits	Lectures
1	UH-TEC-605b	**Economics Paper XVII** **Environmental Economics II**	**4**	**48**

Title: Environmental Economics II

The aim of this paper is to develop a systematic exposition of environmental degradation problems. The paper also deals with the concept of sustainable development and advocates the need for environmental accounting and appropriate laws to improve environment in India.

Units	Modules	No. of Lectures
1	**Module1: Environmental Degradation** 1.1 Concept and types of Environmental Degradation 1.2 Renewable and Non-renewable natural resources 1.3 Land, Air, Water and Noise Pollution: Causes, effects and measures	**12**
2	**Module 2: Environmental Accounting** 2.1 Accounting for environmental and natural resources: Meaning and importance; System of Environmental-Economic Accounting (SEEA) and Environmental and Natural Resources Accounting (ENRA); Integration of Environmental Accounts with System of National Accounts 2.2 Green GDP 2.3 Concept of Green Growth and its Indicators 2.4 Concepts of Green Consumer and Green Business	**12**
3	**Module 3: Sustainable Development and India** 3.1 Concept of Sustainable Development; Characteristics and dimensions of Sustainable Development 3.2 Sustainable Development Goals and Measures with special reference to India 3.3 Smart Cities Mission in India; National Mission For Sustainable Agriculture (NMSA): Objectives, strategy and components	**12**

4	**Module 4: Environmental Policy in India**	12
	4.1 Overview of laws to improve the environment in India	
	4.2 Central pollution Control Board; Industrial Pollution Control Measures in India; Pradhan Mantri Ujjwala Yojana (PMUY); National Green Tribunal.	
	4.3Environmental Education in India	
	4.4 Grass root environmental movements	

Self-Learning components (Unit wise)

Unit	Topic	SWAYAM Link
1	1.3 Sources of air pollution	https://youtu.be/W_jvqIFnQeQ
2	2.1 Environmental accounting	https://youtu.be/hGLWKbBt9SU
3	3.1 Sustainable development	https://youtu.be/QwqsO1RETP0
4	4.1 Environmental regulations in India	https://youtu.be/cPIFjoGusD4

References:

1. Barry Field and Martha k Field: Environmental Economics, McGraw Hill International Edition, 2017.

2. Bhattacharya R.N. (Ed), Environmental Economics: An Indian Perspective, Oxford University Press, New Delhi,2001.

3. Charles Kolstad: Environmental Economics, Oxford University Press, New York, 2nd ed, 2010.

4. Hanley Nick, Shogren Jason and White Ben: Introduction to Environmental Economics, Oxford University Press, 2nd ed, 2013.

5. Kaltschmitt, Martin, Streicher, Wolfgang, Wiese, Andreas, Renewable Energy: Technology, Economics and Environment, Springer, Germany, 2007.

6. V.S. Ganesamurthy: Environmental Economics in India, New Century Publications, New Delhi, 2009.

7. Krishna Mallick: Environmental Movements of India, Amsterdam University Press,2021.

Sr. No	Course Code	Title	Credits	Lectures
1	UH-TEC-606	TYBA- Economics Paper XVIII: Entrepreneurship and Small-Scale Industries	3.5	48

Course Objective:

This paper is designed with the aim of encouraging students to foresee themselves as potential entrepreneurs. The paper includes within the scope for case studies, Interviews of Entrepreneurs, Preparation of project report, group discussion, survey etc.

Units	Modules	No. of Lectures
1	**Module 1: Entrepreneurship** 1.1 Concept of an entrepreneur and entrepreneurship, qualities of the successful entrepreneurs 1.2 Role and functions of entrepreneurs in economic development 1.3 Factors influencing entrepreneurship 1.4 Case studies of Women entrepreneurs and their challenges	12
2	**Module 2: Starting a new venture** 2.1 Project identification selection and formulation, Registration of small-scale industries 2.2 Project report 2.3 Sources of finance for a business 2.4 Export potential and trends of small enterprises 2.5 Major constraints in export performance of small-scale industries	12
3	**Module 3: Small scale industries and Ownership Structure** 3.1 Meaning scope and importance of small-scale industries, problem faced by small scale industries, SWOT analysis for small scale industries. 3.2 Forms of business organizations: Sole proprietorship – Features, advantages & disadvantages. 3.3 Partnership - Features, advantages & disadvantages. 3.4 Joint stock Company – Features, advantages & disadvantages. 3.5 Co-operative – Features, advantages & disadvantages.	12
4	**Module 4: Management and incentives for small scale industries** 4.1 Fundamentals of management: meaning and characteristics 4.2 Productions and operations management: Investment analysis, Plant Location	12

	and Product design 4.3 Working capital management: meaning, significance and sources 4.4 Marketing management: concept, market segmentation, pricing policy 4.5 Human resource management: meaning, job requirements, training and development 4.6 Total quality management: meaning and need in small enterprises	

Self-Learning components (Unit wise)

Module	Topic	Self-Learning Link/References
Module 1	Role of Entrepreneurs in Economic Development	https://www.youtube.com/watch?v=kpwkJSGqIns https://www.youtube.com/watch?v=WMWNjqn_mck
Module 2	Major constraints in export performance of small-scale industries	Khanka, S. S. (2006). *Entrepreneurial development*. S. Chand Publishing. https://www.youtube.com/watch?v=ODS5QR8H1ZY
Module 3	Co-operative– Features, advantages & disadvantages.	https://www.youtube.com/watch?v=ZdnoTd5x8DA
Module 4	Human resource management: meaning, job requirements, training and development	https://www.youtube.com/watch?v=ZdnoTd5x8DA https://www.youtube.com/watch?v=D4yhp2d2bC8&feature=emb_logo

Part 4: Evaluation Criteria and Question Paper Pattern

Division of Marks: 40-60

Continuous assessment and Evaluation (CAE): 40 marks

	Internal Evaluation of 40 Marks	
	Particulars	**Marks**
A	SLE/ Project/ Assignment/ Research Paper/ Academic essay/ etc	20
B	Presentation/Viva based on A	15
C	Active participation in class	5

Semester End Examination (SEE) : 60 marks   **Duration : 2Hours**

Question	**Particulars**	**Marks**
1	From Unit 1 with internal choice	15
2	From Unit 2 with internal choice	15
3	From Unit 3 with internal choice	15
4	From Unit 4 with internal choice	15

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