

**CENTRAL UNIVERSITY OF ANDHRA PRADESH
ANANTAPURAMU**

**Learning Outcome-based Curriculum Framework (LOCF)
for Under-graduate Programme**



Vidya Dadati Vinayam
(Education Gives Humility)

"Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses."

- Lionel Robbins (1935)

B.Sc. (Hons) Economics

Structure and Syllabus
(With effect from the 2021-2022 batch)

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CENTRAL UNIVERSITY OF ANDHRA PRADESH

B.Sc. (Hons) Economics

Important Information to Students

- I. Programme: B.Sc. (Hons) Economics
- II. Eligibility: +2 Science/Arts/Commerce with Mathematics at +2 level (Business mathematics are not applicable)
- III. The minimum duration for completion of the programme is 6 semesters (2 academic years) and the maximum duration shall be 12 semesters (6 academic years) or as per amendments made by the regulatory bodies from time to time.
- IV. A student should attend at least 75% of the classes, seminars, practicals in each course of study.
- V. All theory courses in the programme carry a Continuous Internal Assessment (CIA) component to a maximum of 40 marks and End Semester Examination (ESE) for a maximum of 60 marks. The minimum pass marks for a course is 40%.
All lab components carry a Continuous Internal Assessment (CIA) component to a maximum of 60 marks and End Semester Practical Examination (ESE) for maximum of 40 marks. The minimum pass marks for a course in 40%
- VI. A student should pass separately in both CIA and the ESE, i.e., a student should secure 16 (40% of 40) out of 40 marks for theory and 24 (40% of 60) out of 60 marks for lab components in the CIA. Therefore, a student should secure 24 (40% of 60) out of 60 marks for theory and 16 (40% of 40) out of 40 marks for lab components in the end semester examination.
- VII. A student failing to secure the minimum pass marks in the CIA is not allowed to take the end semester examination of that course. S/he has to redo the course by attending special classes for that course and get the pass percentage in the internal tests to become eligible to take the end semester examination.
- VIII. Students failing a course due to lack of attendance should redo the course.
- IX. Re-evaluation is applicable only for theory papers and shall not be entertained for other components such as practicals/ thesis/dissertation/internship, etc.
- X. An on-campus elective course is offered only if a minimum of ten or 40% of the students registered, whichever is higher, exercise their option for that course.



CENTRAL UNIVERSITY OF ANDHRA PRADESH

B.Sc. (Hons) Economics

1. Introduction

The endeavour of any university programme is to prepare its students to be upright and productive citizens. Hence, Central University of Andhra Pradesh is shaping the undergraduate programmes to a Learning Outcome-based Curriculum Framework (LOCF).

The LOCF approach is intended to provide a focussed, outcome-based syllabus at the undergraduate level with an agenda to structure the teaching-learning experiences in a more student-centric manner. The LOCF approach has been adopted to strengthen students' experiences as they engage themselves in the programme of their choice. The undergraduate programmes will prepare the students for both, academia and employability.

Each programme vividly elaborates its nature and promises the outcomes that are to be accomplished by studying the courses. The programmes also state the attributes that it aims to inculcate at the point of graduation. These attributes encompass values related to wellbeing, emotional stability, critical thinking, social justice and skills for employability. In short, each programme prepares students for sustainability and lifelong learning.

The new curriculum of B.Sc. (Hons) Economics offers a rigorous basis for much of the advanced thinking in the Economics discipline. It provides the student with a logical paradigm for conceptualising and interpreting the behaviour and interactions of households, firms, and government institutions. The curriculum allows students to choose elective courses from a set of courses with contemporary relevance, thereby offering students the flexibility to prepare for careers in academia, law, management, journalism, government, and many other fields. The programme is consistent with global standards in the Economics discipline. It offers training that is comparable to that of an undergraduate student at the world's best universities.

The Central University of Andhra Pradesh hopes that the LOCF approach of the B.Sc. (Hons) Economics programme will help students in making an informed decision regarding the goals that they wish to pursue in further education and life.

2. Course Structure

2.1 Alignment with CBCS

The B.Sc. (Hons) Economics programme is aligned with Choice Based Credit System (CBCS) adopted by the Central University of Andhra Pradesh.

2.2 Types of Courses

The following types of courses are offered under CBCS:

1. Core Courses (CC). A core course is a compulsory course. A student of Economics (Hons) has to take fourteen such Economics courses over six semesters.

2.3 Elective Courses (EC). An elective course is a course that is to be chosen from a specified set of courses. These courses are of two types.

Discipline Specific Electives (DSE): These are elective courses that provide advanced undergraduate training in specialised areas of Economics. A set of seven, semester-specific, courses of this kind are offered in the fifth and sixth semesters of the Honours programme. In each of these semesters, a student has to take two such courses from the relevant semester's set of seven courses.

Generic Electives (GE): These courses, in disciplines other than Economics, are intended to broaden the training of a student in the Economics (Hons) programme. A student of Economics will take one such course, offered by another department, in each of Semesters I, II, III and IV.

3. Ability Enhancement Compulsory Course (AECC): Two such courses are to be taken, one in Semester I (Art of Communication, equivalent to MIL) and one in Semester II (Environmental Science).

4. Skill Enhancement Course (SEC): A student is to take one such course in Semester III and one in Semester IV.

5. Massive Open Online Courses (MOOC): Online Courses being a norm now, there are a lot of organizations out there that offer these MOOC courses. The University Grants Commission (UGC) along with the HRD (Human Resource Development) Ministry has launched the MOOC program in India for higher secondary, bachelors and masters degrees. This will cover a wide range of subjects that may or may not be taught in regular campus studies. As per the UGC instructions the B. Sc. (Hons) Economics programme offers MOOC courses in the I, II, III, and IV semesters.

6. Learning Outcome-based Approach: The B.Sc. (Hons) Economics programme provides a firm basis for much of the advanced thinking in the Economics discipline. It provides the student with a logical paradigm for modelling and interpreting the behaviour and interactions

of households, firms, and government institutions. The programme is consistent with global standards in the Economics discipline. It offers training that is comparable to that of an undergraduate student at the world's best universities. The curriculum allows students to choose elective courses from a set of courses with contemporary relevance, thereby offering students the flexibility to prepare for careers in academia, law, management, journalism, government, and many other fields.

7. Graduate Attributes: Upon completion of this programme, a student will have the necessary skills to understand and analyse in a logical manner all major economic phenomena. A student will be able to analyse government policies and regulations, and demonstrate their significance. Knowing how an economy functions, and how decisions are made by consumers, producers, and regulators, the student will have the necessary skills to identify, analyse, and solve problems in a logical and efficient way. The programme provides the basic ingredients of economic theory and the opportunity to learn how to process and analyse economic data based on sound statistical principles, in order to arrive at economically meaningful conclusions.

8. Programme Objectives:

The programme has been designed to achieve the following specific objectives;

- Initially introduces the relevant areas of economics;
- Provide students with a thorough theoretical and practical training in microeconomics, macroeconomics, growth theories and econometrics as well as specialization in applied fields;
- Inculcate the students to get proficiency in Indian and Global economy and by using that knowledge to critically evaluate economic outcomes;
- Encourage students to acquire command on basic economic theory to make predictions and to analyze alternative economic policy options;
- Create an ability in students to communicate in both oral and written forms by presenting arguments and evidence clearly and concisely;
- Create an ability to engage and understand moral reasoning with respect to economic issues by recognizing the implicit value conflicts present in all economic policy debates;
- The ability to engage in critical thinking as a part of the analysis of economic problems and problem-solving potentiality as well.

9. Programme Learning Outcomes:

On completion of this programme the successful student will have knowledge and understanding of;

- Micro and macroeconomic theory and policy.
- Mathematical and Econometric methods needed for economic analysis.
- Advanced quantitative and computing methods applicable for economics and finance
- Use advanced computer packages to analyse data and estimate a model.
- Analyse and interpret economic information at an advanced level.

- Using quantitative and qualitative information, together with analysis, arguments and commentary, in a form appropriate to the intended audience.
- Contemporary issues of economics, finance and behaviour.

10. Teaching Learning Process: Teaching and learning in this programme involves classroom lectures as well tutorials. The tutorials allow a closer interaction between the students and the teacher as each student gets individual attention. In tutorials, the teacher can keep track of each student's progress and address her/his individual difficulties. Written assignments and projects submitted by students as part of the course are also discussed in tutorials. Some courses also have a laboratory component and some require the students to undertake an independent research project and submit a written report at the end of the project. Research projects will encourage independent thinking among students and prepare them to carry out research on their own after completion of the degree. Students will be assigned regular home assignments and will be tested periodically through quizzes and class tests to ensure that they have properly learn the course material.



CENTRAL UNIVERSITY OF ANDHRA PRADESH, ANANTHAPURAMU

B.Sc. (Hons) in Economics: Semester and Course wise Credits

Semester	Discipline Core (DSC) (L+T+P)	Discipline Specific Elective (DSE) / Generic Elective (GE)	Ability Enhancement Compulsory Courses (AECC)	Skill Enhancement Compulsory Courses (SEC)	Internship	Project Work /Dissertation	Lab	Total Credits
I	DSC 1 (5) DSC 2 (5)	EL 1 GE (5) EL 2 by MOOC (3)	AECC 1 (4)	-	-	-	-	22
II	DSC 3 (5) DSC 4 (5)	EL 3 GE (5) EL 4 by MOOC (3)	AECC 2 (4)	-	-	-	-	22
III	DSC 5 (5) DSC 6 (5) DSC 7 (5)	EL 5 DSE (5) EL 6 by MOOC (4)	-	SEC 1 (2)	-	-	SEC 1 (2)	28
IV	DSC 8 (5) DSC 9 (5) DSC 10 (5)	EL 7 DSE (5) EL 8 by MOOC (4)	-	SEC 2 (2)	-	-	SEC 2 (2)	28
V	DSC 11 (5) DSC 12 (5) DSC 13 (4)	EL 9 DSE (5) EL 10 by MOOC (4)	-	-	SEC 3 (4)	-	DSC 13 (1)	28
VI	DSC 14 (5) DSC 15 (5)	EL 11 DSE 4 (5)	-	-	-	DSC 16 (5) Project Work	-	20
Total	74	48	8	4	4	5	5	148
Percentage	50	32.43	5.40	2.70	2.70	3.38	3.38	-



CENTRAL UNIVERSITY OF ANDHRA PRADESH, ANANTHAPURAMU

B.Sc. (Hons) Economics: Programme Structure

Academic Year-I

S. No.	Course Code	Title of the Course	Number of Credits	Contact Hours		
				L	T/L	P/S
Semester - I						
1	BEC101	CC: Introductory Microeconomics	5	60	5	10
2	BEC102	CC: Mathematical Methods for Economics-I	5	60	5	10
3	BEC103	GE: Statistical Methods for Economics-I	5	60	5	10
4	BEC104	AECC: Effective Communication Skills	4	45	5	10
6	BEC105	MOOS/Online/ Elective*	3	-	-	-
7	BEC106	Add on Course	-	20	-	10
Total			22	225	20	40
Semester - II						
1	BEC201	CC: Introductory Macroeconomics	5	60	5	10
2	BEC202	CC: Mathematical Methods for Economics-II	5	60	5	10
3	BEC203	GE: Statistical Methods for Economics-II	5	60	5	10
4	BEC204	AECC: Environmental Science	4	45	5	10
6	BEC205	MOOC/Online/ Elective *	3	-	-	-
7	BEC206	Add on Course	-	20	-	10
Total			22	225	20	40

Note: *As per the choice of the student and the instructor

CC : Core Course

GE : Generic Elective

DSE : Discipline Specific Elective

SEC : Skill Enhancement Compulsory

AECC : Ability Enhancement Compulsory Course

MOOC: Massive Open Online Course



CENTRAL UNIVERSITY OF ANDHRA PRADESH, ANANTHAPURAMU

B.Sc. (Hons) Economics: Programme Structure

Academic Year-III

S. No.	Course Code	Title of the Course	Number of Credits	Contact Hours		
				L	T/L	P/S
Semester - V						
1	BEC501	CC: Indian Economy-I	5	60	5	10
2	BEC502	CC: Development Economics-I	5	60	5	10
3	BEC503	CC: Research Methodology	4	39	-	6
		Lab: Fundamentals of Computer Skills	1	-	23	-
4	BEC504	SEC: Internship #	4	-	-	-
5	BEC505	MOOC / Online/ Elective*	4	20	5	5
6	BEC506	Add on Course				
7	DSE: Any one of the Following:		5	60	5	10
	BEC515	Money and Financial Markets				
	BEC516	Behavioural Economics				
	BEC517	Economics of Health and Education				
Total			28	260	25	45
Semester - VI						
1	BEC601	CC: Indian Economy-II	5	60	5	10
2	BEC602	CC: Development Economics-II	5	60	5	10
3	BEC603	CC: Research Project	5	-	-	-
4	DSE: Any one of the Following:		5	60	5	10
	BEC615	Indian Financial System				
	BEC616	Strategy and Game Theory				
	BEC617	Political Economy				
Total			20	180	15	30

Note: # Students must complete the internship programme during semester break

*As per the choice of the student and the instructor

CC : Core Course

GE : Generic Elective

DSE : Discipline Specific Elective

SEC : Skill Enhancement Compulsory

AECC : Ability Enhancement Compulsory Course

MOOC: Massive Open Online Course

Credit Distribution Structure

Semester	Total Credits	Cumulative Credit at the end of the Semester
Semester I	22	22
Semester II	22	44
Semester III	28	72
Semester IV	28	100
Semester V	28	128
Semester VI	20	148

- **Required credit:** The minimum required credit to be earned by the student to award the degree is 148. However, they can earn credits in excess of 148 by taking other courses. The upper limit will be 160 credits.

- **Assessment Pattern:**

Theory course: 40% of internal [formative evaluation -- two best out of three tests (for a maximum of 15 marks each = 30marks) -- seminar/ assignments/ attendance (10 marks)] and 60% (summative evaluation -- end of semester examination)

Lab components: 60 % of internal exam/lab and 40% (summative evaluation -- end of semester examination)

End Semester Examination

Maximum Marks: 60

Time: 3 Hours

Dissertation

Dissertation/Project report: Evaluation - 60 marks

Viva-Voce - 40 marks

SEMESTER WISE DETAILED SYLLABUS

SEMESTER-I

Course Code : BEC101 Core/ Elective : Core No. of Credits : 5	Course Title Introductory Microeconomics
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Course Objective:

This course is designed:

- To expose the students to the basic principles of microeconomic theory.
- To introduces the first course in economics from the perspective of individual decision making as consumers and producers.

Course Learning Outcomes:

On successful completion of this course the student should be able to:

- Think like an economist and illustrate how microeconomic concepts can be applied to analyze real-life situations.
- Learn some basic principles of microeconomics, interactions of supply and demand, and characteristics of perfect and imperfect markets.

Course Outline

Unit-I:

Exploring the Subject Matter of Economics: (a) Scope and method of Economics, Defining Economics, Microeconomics and Macroeconomics, Normative Economics and Positive Economics. (b) Understanding the basic principles of Economics. Production Possibility Frontier, interdependence and gains from trade.

Unit-II:

Concept of Demand and Supply, and Elasticity: (a) Concept of demand, Determinants of individual demand and market demand, (b) Concept of Supply. Determination of equilibrium price in a competitive market. (c) Demand and supply elasticities – types of elasticity, Methods of calculation, factors affecting elasticity, demand elasticity and revenue. Long run and short run elasticities of demand and supply. (e) Income and cross-price elasticity.

Unit-III:

Consumer and Households Behaviour: Cardinal utility theory: Law of diminishing Marginal Utility, derivation of Marshallian demand curve. Ordinal utility theory: Indifference curves and their properties, budget line, consumer's equilibrium. Income Consumption Curve, price consumption curve and Engel's curve. Demand elasticity and classification of commodities, Normal, Inferior and Giffen goods, Income and Substitution effect. Indirect utility function, compensated demand curve and Revealed Preference Theory.

Unit-IV:

Theory of Producer/Firm Behaviour: The concepts of Total Revenue, Marginal Revenue and Average Revenue, Production function, law of variable proportion, fixed co-efficient production function, returns to a factor, returns to scale, iso-quant and its properties, iso-cost line. Marginal rate of technical substitution, equilibrium of the producer, constrained output maximization and constrained cost minimization, output and substitution effects, expansion path, elasticity of substitution, some examples of technology (fixed proportion, perfect substitute, Cobb-Douglas and CES production function) homogeneous and homothetic production function and their properties.

Unit-V:

Total Cost: Various concepts of Cost, Fixed and Variable Cost, Average and Marginal Costs, derivation of short-run cost, long-run cost, shape of long-run average cost, Economies and Dis-economies of Scale.

References:

- Case, Fair and Oster, *Principles of Economics*. Prentice Hall, 11th edition, 2014.
Lipsey, R.G. and Chrystal, K.A., *Economics*. Oxford University Press, 13th edition.
Mankiw, N.G. *Principles of Economics*, Cengage Learning. 7th edition, 2015.
Joseph E. Stiglitz and Carl E. Walsh, *Economics*. W.W. Norton & Company, Inc., New York, International Student Edition, 4th Edition, 2007.
Gravelle and Rees, *Microeconomics*. Pearson, 2004/ Latest Edition.
Henderson and Quandt, *Microeconomic Theory*, McGraw Hill, (Latest Edition)
Hal R. Varian, *Intermediate Microeconomics: A Modern Approach*, 2014/ Latest Edition.

Course Code : BEC102 Core/ Elective : Core No. of Credits : 5	Course Title Mathematical Methods for Economics-I
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Course Objective:

This is the first of a compulsory two-course sequence.

- The first course is introduced students to mathematical techniques that are used in Economics
- The mathematical approach has the advantages of precision and clarity in understanding complex economic phenomena.

Course Learning Outcomes:

On successful completion of this course the student should be able to:

- Upgrades the mathematical skills acquired in school and paves the way for the second semester course Mathematical Methods in Economics II.
- Apply the analytical tools wherever optimisation techniques are used in business decision-making. These tools are necessary for anyone seeking employment as an analyst in the corporate world.

Course Outline

Unit-I:

Preliminaries:(a) Sets and Operations, (b) Numbers; Combinatorics-principles of counting; Series and progressions; Compounding, discounting and rate of growth; (c) Vectors: basic operations on vectors; (d) Basic ideas in predicate logic - operations; types of proof of a proposition; use of universal and existential quantifiers.

Unit-II:

Relations, Functions, and Set of Points: Relations, functions and correspondences; Binary relations and their properties. Binary relations and ordering of sets; sequence of points and convergence of sequences; bounds, bounded sets; closed and open sets, compact sets; connected and convex sets.

Unit-III:

Functions of one Variable: Graph of a function; types of functions – linear, polynomial (including quadratic), exponential, logarithmic, periodic functions, demand and supply functions.

Unit-IV:

Limit, Continuity and Derivatives: Limit, Continuity and Derivatives of a function of one variable; higher order derivatives; Intermediate value and mean theorems; Concave and convex functions; Indifference curve and consumer equilibrium; Elasticity of demand and

supply functions; zeroes of a function, critical values and stationary points; Optimization in one variable: absolute and relative optima. Polynomial approximation and Taylor expansion.

Unit-V:

Integration, Difference Equations: Concept; Rules and techniques of integration of functions of one variable; Indefinite and definite integrals; Integration with respect to several variables; Applications to consumer's surplus and producer's surplus. Difference Equations; will give full understanding of Discrete functions

References:

- Chiang, A.C. and Kevin Wainwright, *Fundamental Methods of Mathematical Economics*, McGraw Hill, 4th Edition, 2004.
- Sydsaeter, Knut, Peter Hammond, Arne Strom, and Andre's Carvajal, *Essential Mathematics for Economic Analysis*, Pearson, 5th edition, 2016.
- Klein, Erwin, *Mathematical Methods in Theoretical Economics*. Academic Press
- Simon, Carl P and Lawrence Blume, *Mathematics for Economists*. Viva Books, 2010.

Course Code : BEC103 Core/ Elective : Elective/GE No. of Credits : 5	Course Title Statistical Methods for Economics-I
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Course Objective:

- To familiarises students in the statistical techniques employed in not just economics, but increasingly, all social and pure scientific research.
- To help students to analyze data in economics and will also build a foundation for Econometrics.

Course Learning Outcomes:

On completion of this course the student can understand:

- Utilizing statistical techniques for quantitative, data based problems, analysis and inference.
- Develops the ability to understand econometrics courses at the Honours and Masters levels.

Course Outline

Unit-I:

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

Unit-II:

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

Unit-III:

Probability-I: Elements of Probability: Permutation and combination - Random Experiment, Sample Space, Events - Probability - Axiomatic definition, finite sample space - Generalized addition theorems, Independence of two events - Conditional probability, Bayes' Theorem - Operation of chance, learning from economic history.

Unit-IV:

Probability-II: Elements of Probability: Random Variables and Probability Distributions - Discrete & Continuous Random Variables - Probability Mass & Density functions, Distribution Functions - Mathematical Expectations, Theorems - Binomial, Poisson, Normal, Uniform, Exponential & Lognormal distributions- - Uncertainty in economic situations; patterns and forming expectations.

Unit-V:

Index Numbers: Definition and types - Price index, quantity index, value index, simple and weighted index number, construction of Index numbers - Methods: aggregative and relative methods - Laspeyres', Paasche's, Edgeworth- Marshall, Fisher's ideal formula.

References:

- Hooda R. P., *Statistics for Business and Economics*. 2nd ed, Macmillan India Ltd., 2010.
- David S. Moore, *The Basic Practice of Statistics*. W.H. Freeman & Company, 2009/Latest.
- Mood Alexander, *Introduction to the Theory of Statistics*. McGraw Hill, 2017.
- Anderson, D. R., D. J. Sweeney and T. A. Williams, "*Statistics for Business and Economics*", Cengage Learning India Pvt. Ltd., 11th Edition, 2011.
- Goerge W Snedecor., *Statistical Methods*. Iowa State University Press, 1989.
- Daniel and Terrel, *Business Statistics for Management and Economics*. Hoaghton Mifflin Co., Boston, Toronts, 7th Edition, 1995, PP 1 to 972 + 6 Appendices.
- Gerald Keller, *Statistics for Management and Economics*. 11th edition, Cengage publication, 2017.
- Teresa Bradley, *Essential Statistics for Economics, Business and Management*. John Willey Publisher, 2007.
- M. H. Degroot and M. J. Schervish, *Probability and Statistics*. 4th edition, Pearson, 2012.

<p>Course Code : BEC104 Core/ Elective : AECC-I No. of Credits : 4</p>	<p style="text-align: center;">Course Title Effective Communication Skills</p>
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Course Objective:

- To strengthen the Upper Intermediate level English language skills of students. It is a skill rather than a content subject.
- To enable the students to appreciate the role of listening skill and improve their pronunciation.
- To enable the students to express themselves fluently and accurately in social and professional success.
- To make the students understand that writing is an exact formal skill.

Course Learning Outcomes:

- After completion of this course students will communicate and cope with their academic needs.

Course Outline

Unit-1:

Introduction to English Pronunciation: Introduction to English Pronunciation: Spoken English- its need and importance- Pronunciation-Pronunciation and listening - Pronunciation and spelling -Intelligibility and a model of pronunciation - important features of pronunciation- Sounds - Production of speech - Description of speech sounds - Word Accents - Intonations.

Unit-II:

Listening Comprehension: Importance of Listening - purpose of listening - types of listening- process of listening- process of listening - barriers to the listening - how to listen - Listen to English phonology (sounds of English, vowels, and consonants, minimal pairs, pronunciation patterns)

Unit-III:

Speaking: Speaking (spoken language vs written language, formal and informal language) - Greeting and taking leave - Introducing oneself and others - Icebreaking activities - JAM session - Presentation skills - Arguing or debating - Phone conversations

Unit-IV:

Reading and Writing Skills: To promote local and global comprehension of different kinds of texts suitable to the intermediate level - Identifying the main idea and supporting details - Analyse and sort information - Distinguish between relevant and irrelevant ideas. To be able to write coherently and grammatically correct paragraphs - Paragraph writing- Summarizing- Organization of ideas - Making an outline.

Unit-V:

Vocabulary and Grammar: Using appropriate vocabulary to express regular activities, feelings, ideas - Phrasal verbs – Idioms - Content Related Vocabulary. Tense and Aspect – Voice – Interrogatives - Modal verbs

References:

Adrian Doff and Christopher Jones, *Language in use – Intermediate. Classroom Book.* C.U.P. 2014.

Raman Meenakshi, Sangeeta Sharma, *Technical Communication Principles and Practice.* Ed Second, Oxford University Press, Delhi, 2013.

Dhanavel, S.P., *English and Communication Skills for Students of Science and Engineering.* Orient Blackswan Ltd., 2009

Raman, Meenakshi, Prakash Singh, *Business Communication.* 2nd Edition, Oxford University Press, 2013

Taylor, Shirley, V. Chandra, *Communication for Business.* 4th Edition. Dorling Kindersley (India) Pvt. Ltd, 2011.

Any other material that the teacher thinks essential for the class.

SEMESTER-II

Course Code : BEC201 Core/ Elective : Core No. of Credits : 5	Course Title Introductory Macroeconomics
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Course Objective:

This course aims to

- Introduce the students to the basic concepts of macroeconomics and it deals with the aggregate economy.
- Discusses the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variable like savings, investment, GDP, money, inflation, and the balance of payments.

Course Learning Outcomes:

On completion of this course the student can able to:

- Train the students of economics about the basic elements of savings, investment, GDP, money, inflation, and the balance of payments.
- Understand how an economy works and develop the understanding about the money.

Course Outline

Unit-I:

Introduction to Macroeconomics and National Income Accounting: Basic issues studied in macroeconomics; measurement of gross domestic product; income, expenditure and the circular flow; real versus nominal GDP; price indices; national income accounting for an open economy.

Unit-II:

Money: Functions of money; quantity theory of money; determination of money supply and demand; credit creation; tools of monetary policy.

Unit-III:

Inflation: Inflation and its social costs; consequences of inflation; factors affecting demand-pull and cost-push inflation; costs of inflation; remedies to control inflation.

Unit-IV:

Balance of Payments: Balance of Trade; Current and Capital accounts. Recent trends.

Unit-V:

The Closed Economy in the Short Run: Classical and Keynesian systems; simple Keynesian model of income determination; IS- LM model; fiscal and monetary multipliers.

References:

N. Gregory Mankiw, *Macroeconomics*, 9th edition. Cengage learning, 2021.

Richard T. Froyen, *Macroeconomics*. Pearson Education, 2013.

Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 2018.

Errol D'Souza, *Macroeconomics*, Pearson Education, 2009.

Paul R. Krugman, Maurice Obstfeld and Marc Melitz, *International Economics*, Pearson Education, 2018.

Course Code : BEC202 Core/ Elective : Core No. of Credits : 5	Course Title Mathematical Methods for Economics-II
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Course Objective:

This course is the second part of a compulsory two-course sequence. The objective of this sequence is to:

- Transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this Syllabus.
- In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general.

Course Learning Outcomes:

On completion of this course the student can able to:

- Acquire the mathematical foundations necessary for further study of a variety of disciplines including postgraduate economics, statistics, computer science, finance and data analytics.
- Learn about vectors, matrices and determinants, optimize a given constrained or unconstrained functions, and work upon convexity and concavity of functions.

Course Outline

Unit-I:

Differential Equations: Introduction to the Differential Equations: characterisations, properties with respect to various operations and applications, Cob-web.

Unit-II:

Linear Algebra: Vector spaces: algebraic and geometric properties, scalar products, norms, orthogonality; linear transformations: properties, matrix representations and elementary operations; systems of linear equations: properties of their solution sets; determinants: characterization, properties and applications, input-output analysis.

Unit-III:

Functions of Several Real Variables: Geometric representations: graphs and level curves; differentiable functions: characterizations, properties with respect to various operations and applications; second order derivatives: properties and applications; the implicit function theorem, and application to comparative statics problems; homogeneous and homothetic functions: characterizations and applications.

Unit-IV:

Constrained Optimization: Convex sets; geometric properties of functions: convex functions, their characterizations, Properties and applications; further geometric properties of functions: quasiconvex functions, their characterizations, properties and applications, linear programme.

Unit-V:

Unconstrained Optimization: Unconstrained optimization: geometric characterizations, characterizations using calculus and applications; constrained optimization with equality constraints: geometric characterizations, Lagrange characterization using calculus and applications; properties of value function: envelope theorem and applications.

Reading:

- K. Sydsaeter and P. Hammond, *Mathematics for Economic Analysis*. Pearson Educational Asia: Delhi, 2002.
- Varian, Hal R, *Intermediate Microeconomics with Calculus: A Modern Approach*. New York: W.W. Norton & Co., 2014.
- Chiang A G and Kevin Wein Wright, *Fundamental Methods of Mathematical Economics*. McGraw Hill Education, 2017.
- G. Strang, *Introduction to Linear Algebra*, Wellesley-Cambridge Press. Wellesley. MA, Fourth edition, 2009.
- Hoy, Michael, et al. *Mathematics for Economics*. The MIT Press, 2011. JSTOR, www.jstor.org/stable/j.ctt5hhc2f. Accessed 5 July 2021.

Course Code : BEC203 Core/ Elective : GE No. of Credits : 5	Course Title Statistical Methods for Economics-II
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Course Objective:

- To have a proper understanding of Statistical applications in Economics
- To enable the use of the concept of estimate population parameters, hypothesis testing, correlation and regression analysis wherever relevant.
- It sets a necessary foundation for the econometrics courses within the Honors programme.

Course Learning Outcomes:

- At the end of the course, the student should understand the concept of estimate population parameters, hypothesis testing, and correlation and regression analysis.
- Understand and critically discuss the issues surrounding sampling and significance.
- Solve a range of problems using the techniques covered and conduct basic statistical analysis of data.

Course Outline

Unit-I:

Methods of Sampling: Probability & Non- Probability sampling methods - Simple random sampling with and without replacement, use of random number tables, Stratification, uni-way, multiway; Cluster sampling, stage sampling, Systematic sampling-linear and circular; Phase sampling and Inverse sampling - Convenience sampling, Judgment sampling; Delphi sampling, Snowball sampling; Purposive sampling - Randomness, use and utility of various sampling methods.

Unit-II:

Sampling and Estimation: Populations and Sample; Parameter and Statistic - Principles of Sampling, Random number tables - Estimation Theory: Point Estimators, Sampling Distribution of a Statistic: Z, T, Chi Square, F Tests, - Interval Estimation - Drawing inferences from a sample; standard error - Robustness of statistical tests.

Unit-III:

Hypothesis Testing: Principle of Hypothesis Testing: Type I, II errors; Level of Significant, Simple, composite and joint hypotheses, Null and Alternative hypothesis - Development of hypotheses, formulation, specification, use of and choice of tools - Testing means, proportions, variance – small and large samples, p value, power or a test - Test for Goodness of Fit - T, Chi-Square and F Distributions - Analysis of Variance- ANOVA & MANOVA.

Unit-IV:

Correlation and Regression: Correlation, Correlation coefficient, Karl Pearson's Correlation Coefficient, Spearman's Rank Correlation - Regression, Regression versus

Correlation; Simple linear regression - Method of ordinary least square, derivation of slope and intercept; testing for significance - Multiple regression - Distributed lag models, Koyck and Almon's weighting schemes.

Unit-V:

Time Series Analysis: Introduction of time series analysis; Components of Time Series; Determination and Elimination of Trend; Linear and Non-Linear (Second Degree Parabola and Exponential Curves); Measurement of Seasonality, Cyclical and Random Components; Models of Time Series and Forecasting Methods.

References:

- Jay L. Devore, *Probability and Statistics for Engineers*, Cengage Learning, 2010.
- Mood Alexander, *Introduction to the Theory of Statistics*, McGraw Hill, 2017.
- George W Snedecor, *Statistical Methods*, Iowa State University Press, 1989/Latest.
- Hooda R.P., "*Statistics for Business and Economics*", 2nd ed, Macmillan India Ltd., 2010.
- David S. Moore., *The Basic Practice of Statistics*. W.H. Freeman & Company, 2013.
<https://silo.pub/the-basic-practice-of-statistics-j-6712514.html>
- Robert V. Hogg, *Probability and Statistical Inference*, 9th ed, Hogg and Tanis, Pearson, 2015.
- Morris H. DeGroot, Mark J. Schervish, *Probability and Statistics: Pearson New International Edition*, Pearson Education Limited, 2013.

Course Code : BEC204 Core/ Elective : AECC-II No. of Credits : 4	Course Title Environmental Science
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Course Objective:

- To educate the students about the importance of environment and its protection, and environmental concerning sustainable development.
- To create awareness about the Environmental Pollution Acts, social issues associated to environment, human population, and the environment.

Course Learning Outcomes:

The course will empower the undergraduate students by helping them to:

- Gain in-depth knowledge on natural processes that sustain life, and govern economy.
- Predict the consequences of human actions on the web of life, global economy and quality of human life.
- Develop critical thinking for shaping strategies (scientific, social, economic and legal) for environmental protection and conservation of biodiversity, social equity and sustainable development.
- Acquire values and attitudes towards understanding complex environmental-economic social challenges, and participating actively in solving current environmental problems and preventing the future ones.
- Adopt sustainability as a practice in life, society and industry.

Course Outline

Unit-I:

Introduction to Environmental Science: (a) Definition, scope, importance, and multidisciplinary nature of Environment; Concept sustainable development; Introduction to spheres; Institutions and people in environment (b) Renewable and non-renewable resources; Natural resources and associated problems- (i) Forest resources (ii) Water resources (iii) Mineral resources (iv) Food resources (v) Energy resources (vi) Land resources.

Unit-II:

Ecosystems: Concept of an ecosystem; Structure and function of an ecosystem; Producers, consumers and decomposers; Energy flow in the ecosystem; Ecological succession; Food chains, food webs and ecological pyramids; Introduction, types, characteristic features, structure and function of the following ecosystem: - (i) Forest ecosystem, (ii) Grassland ecosystem, (iii) Desert ecosystem, (iv) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

Unit-III:

Biodiversity and Conservation: Concept of Biodiversity; genetic, species, and ecosystem diversity; Biogeographical classification of India; Value of biodiversity; Biodiversity at global, national and local levels; India as a mega-diversity nation; Hot-spots of biodiversity;

Threats to biodiversity: Endangered and endemic species of India; Conservation of biodiversity: In-situ and Ex-situ conservation.

Unit-IV:

Environmental Pollution and Social Issues: (a) Cause of pollution, effects and control measures of the following (i) Air, (ii) Water (iii) Soil (iv) Marine (v) Noise (vi) Thermal (vii) Nuclear hazards (viii) Solid waste of urban and industrial wastes; Pollution case studies. (b) Environment Laws: International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD). (c) Disaster management (d) Urban problems related to Environment (e) Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit-V:

Human Population and the Environment: Population growth, variation among nations; Environment and human health; Role of Information Technology in Environment and human health; Case Studies.

Unit-VI:

Field Work: Visit local area to document environmental assets, polluted sites, and ecosystems, etc.

Reference:

- Erach Bharucha, *Textbook of Environmental Studies for Undergraduate Courses*. Universities press (India) Private Limited, Hyderabad, Telangana, India, 2018.
- Agrawal, KM, Sikdar. PK and Deb, SC., *A Text book of Environment*. Macmillan Publication, 2002.
- Mahua Basu and Xavier, S. *Fundamentals of Environmental Studies*. Cambridge University Press, Delhi, India, 2016.
- Rajagopalan, R., *Environmental Studies- from Crisis to Cure*. Oxford University Press, New Delhi, India, 2016.
- Mitra, A. K, and Chakraborty, R, *Introduction to Environmental Studies*. Book Syndicate, 2016.
- Enger, E. and Smith, B, *Environmental Science: A Study of Interrelationships*. Publisher: McGraw-Hill Higher Education; 12th edition, 2010.
- Y.K. Singh, *Environmental Science*. New Age International Pvt. Ltd, Delhi, 2006.
- Basu, R. N, *Environment*. University of Calcutta. 2006.
- Misra, SP and Pande, S N., *Essential Environmental Studies*. (3rd Edition), Ane Books Pvt. Ltd, 2011.
- Ghosh Roy, MK. *Sustainable Development*. (Environment, Energy and Water Resources), Ane Books Pvt. Ltd, 2011.
- Mitra, A.K, Bhattacharya, S. and Saha, D, *Environmental Studies*. St. Xavier's College, Kolkata, 2007.

SEMESTER-III

Course Code : BEC301 Core/ Elective : Core No. of Credits : 5	Course Title Microeconomics-I
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Course Objective:

The course is designed to:

- Provide a sound training in microeconomic theory to formally analyze the behaviour of individual agents.
- Since students are already familiar with the quantitative techniques in the previous semesters, mathematical tools are used to facilitate understanding of the basic concepts.
- This course looks at the behaviour of the consumer and the producer and also covers the behaviour of a competitive firm.

Course Learning Outcomes:

After this, the students would be able to:

- Understand the basic elements of consumer theory and production theory and the functioning of perfectly competitive market.
- Give students a solid grasp of microeconomic analysis using mathematical techniques where appropriate.
- Learn about consumer and production theories and optimality and market failures.

Course Outline

Unit-I:

Consumer Theory: Preference; utility; budget constraint; choice; demand; Slutsky equation; buying and selling; choice under risk and intertemporal choice; revealed preference.

Unit-II:

Production, Costs and Perfect Competition: Technology; isoquants; production with one and more variable inputs; returns to scale; short run and long run costs; cost curves in the short run and long run; review of perfect competition.

Unit-III:

Alternative Theories of the Firm: Critical evaluation of marginal analysis; Baumol's sales revenue maximization model (simple static with advertisement model); Full-cost pricing rule; Bain's limit pricing theory.

Unit-IV:

Welfare Economics: Conditions of Pareto Optimality; Pareto efficiency versus Pareto optimality, Market failure and its causes; Markets with Imperfect competition; consumption and production externalities; public goods. Ways for correcting it.

Unit-V:

Price and output Determination: Oligopoly-Price and output determination – Non Collusive: Cournot, Kink demand curve and price rigidity, Collusive: Price leadership, Cartels.

Reference:

Hal R. Varian, *Intermediate Microeconomics: A Modern Approach*, W.W. Norton and Company/Affiliated East-West Press (India), 8th edition, 2010.

A. Koutsoyiannis, *Modern Micro Economics*. Pargrave Publishers, Indian Edition, 2003.

C. Snyder and W. Nicholson, *Fundamentals of Microeconomics*, Cengage Learning (India), 2010.

B. Douglas Bernheim and Michael D. Whinston, *Microeconomics*. Tata McGraw-Hill (India), 2009.

C. Snyder and W. Nicholson, *Fundamentals of Microeconomics*. Cengage Learning (India), 2010.

Course Code : BEC302 Core/ Elective : Core No. of Credits : 5	Course Title Macroeconomics-I
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Course Objective:

- This course introduces students to formal modeling of the micro-economy in terms of analytical tools.
- This course introduces the students to formal modeling of a macro-economy in terms of analytical tools.
- It also introduces the students to various theoretical issues related to an open economy.

Course Learning Outcomes:

After this, the students would be able to:

- Learn about aggregate demand and aggregate supply functions.
- Establish relationship between inflation and unemployment.
- Learn about consumption and investment functions.

Course Outline

Unit-I:

Aggregate Demand and Aggregate Supply Curves: Derivation of aggregate demand and aggregate and supply curves; interaction of aggregate demand and supply. Effective Demand.

Unit-II:

Inflation, Unemployment and Expectations: Phillips curve; adaptive and rational expectations; policy ineffectiveness debate.

Unit-III:

Open Economy Models: Short-run open economy models; Mundell-Fleming model; exchange rate determination; purchasing power parity; asset market approach; Dornbusch's overshooting model; monetary approach to balance of payments; international financial markets.

Unit-IV:

Consumption Functions: Consumption Function, Technical Attributes of Consumption, Keynesian Psychological Law of Consumption and its Implications. Income – Consumption Relationship: Absolute and Relative Income Hypothesis and Permanent Income Hypothesis.

Unit-V:

Investment Function: Types of Investment, Determination of level of Investment, Marginal Efficiency of Capital (MEC). Theories of Investment: Classical and Keynesian Theory of Investment (Marginal Efficiency of Investment), Saving –Investment Equality.

Readings:

- Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010.
- N. Gregory Mankiw. *Macroeconomics*, Worth Publishers, 7th edition, 2010.
- Felderer-Homburg, *Macroeconomics and New Macroeconomics*, Springer-Verlag, 2nd edition, 1987.
- Richard Froyen, *Macroeconomics*, Pearson Education Asia, 2nd edition, 2005.
- Olivier Blanchard, *Macroeconomics*, Pearson Education, Inc., 5th edition, 2009.
- Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education, Inc., 7th edition, 2011.
- Errol D'Souza, *Macroeconomics*, Pearson Education, 2009.
- Paul R. Krugman, Maurice Obstfeld and Marc Melitz, *International Economics*, Pearson Education Asia, 9th edition, 2012.

Course Code : BEC303 Core/ Elective : Core No. of Credits : 5	Course Title Introductory Econometrics
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Course Objective:

This course provides a comprehensive introduction to:

- Basic econometric concepts and techniques.
- Covers statistical concepts of hypothesis testing, estimation and diagnostic testing of simple and multiple regression models.
- Covers the consequences of and tests for misspecification of regression models.

Course Learning Outcomes:

After this, the students would be able to:

- Learn about statistical concepts of hypothesis testing.
- Develop understanding of estimation and diagnostic testing of simple and multiple regression models.
- Learn about consequences, detection and remedies when assumptions are violated.

Course Outline

Unit-I:

Nature and Scope of Econometrics: Definition, Scope, and Methodology of econometrics; Nature and sources of data for econometric analysis; Specification of an econometric model.

Unit-II:

Statistical Concepts: Normal distribution; chi-sq, t- and F-distributions; estimation of parameters; properties of estimators; testing of hypotheses: defining statistical hypotheses; distributions of test statistics; testing hypotheses related to population parameters; Type I and Type II errors; power of a test; tests for comparing parameters from two samples.

Unit-II:

Simple Linear Regression Model: Two Variable Case: Estimation of model by method of ordinary least squares; properties of estimators; goodness of fit; tests of hypotheses; scaling and units of measurement; confidence intervals; Gauss-Markov theorem.

Unit-IV:

Multiple Linear Regression Model: Estimation of parameters; properties of OLS estimators; goodness of fit - R^2 and adjusted R^2 ; partial regression coefficients; testing hypotheses – individual and joint significance of regression.

Unit-V:

Violations of Classical Assumptions: Consequences, Detection and Remedies: Multicollinearity; heteroscedasticity; serial correlation.

References:

- Damodar Gujarathi, *Basic Econometrics*. 5th Edition, Tata McGraw-Hills.
- L Woolridge, *Introductory Econometrics: A Modern Approach*. 5th Edition, Cengage Learning.
- J Johnston, *Econometric Methods*. 4th Edition, McGraw-Hill Education.
- W. H Greene, *Econometric Analysis*. 8th Edition, Pearson Education, 2018.
- Jay L. Devore, *Probability and Statistics for Engineers*. 9th Edition, Cengage Learning.
- Jay L. Devore, *Probability and Statistics for Engineers*, Cengage Learning, 2010/Latest.
- John E. Freund, *Mathematical Statistics*, Prentice Hall, 1992.
- D. N. Gujarati and D.C. Porter, *Essentials of Econometrics*, McGraw Hill, 4th Edition, International Edition, 2009.
- Christopher Dougherty, *Introduction to Econometrics*, Oxford University Press, 3rd Edition, Indian edition, 2007.
- Jan Kmenta, *Elements of Econometrics*, Indian Reprint, Khosla Publishing House, 2nd Edition, 2008.

Course Code : BEC304 Core/ Elective : SEC-I No. of Credits : 4	Course Title IT- Fundamentals of Computer Skills
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Course Objective:

- To introduce the fundamentals of computing devices and reinforce computer vocabulary, particularly with respect to personal use of computer hardware and software, the Internet, networking and mobile computing.
- To provide hands-on use of Microsoft Office applications Word, Excel and PowerPoint. Completion of the assignments will result in MS Office applications knowledge and skills.

Course Learning Outcomes:

- After completion of this course student can able understanding why computers are essential components in business, education and society.
- Students are handy with the computer in basic level.

Course Outline

Unit-I:

Computer Fundamentals: Components of a computer system. Classification of computers. Types of computers. Brief history of evolution of computers and generation of computers. Computer hardware and software. Input/output devices, internet and web surfing etc. Personnel Computers: PC & Types of Computers, Primary & Secondary storage device, other peripherals used with PC.

Unit-II:

Data Processing: Types, Data processing cycle, Computers in Business.

Unit-III:

Data Communication & Networks: Introduction of Communication, Communication Medias, Communication Modes, Goals of Networks, Types of Networks, Client/Server Computing, Network Topologies, MODEM, Gateways, Multiplexer, Bridges, Routers, Ethernet, Internet, WWW etc.

Unit-IV:

MS Office: Focus is on teaching how to use Office suite properly.

- a. MSWord: The following features are explored for MSWord
 - i. Templates using existing templates and creating new templates.
 - ii. Complex Tables, Use of Pictures with text flowing around the picture, Sectioning, Captioning, Cross Referencing, Table of Contents.
 - iii. Using Equation editor for complex equations, Multiple Column format documents.

Unit-V:

MS Excel & PowerPoint: Using complex equations for combining data, VLOOKUP function, Excel charts, Excel Sort, Excel Filter, Pivot Table. **MS PowerPoint:** Using Animations and Transitions.

Reference:

V Rajaraman, *Fundamentals of Computers*, PHI, Sixth Edition, 2014

Efraim Turban, R. Kelly Rainer Jr, Richard E. Potter, *Introduction to Information Technology*. John Wiley & Sons, (Asia) Pvt. Ltd. Singapore, 2004.

Course Code : BEC315 Core/ Elective : Elective/GE No. of Credits : 5	Course Title Public Finance
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Course Objective:

- This course is a non-technical overview of government finances with special reference to India.
- The course does not require any prior knowledge of economics.
- It will look into the efficiency and equity aspects of taxation of the centre, states and the local governments and the issues of fiscal federalism and decentralization in India.
- The course will be useful for students aiming towards careers in the government sector, policy analysis, business and journalism.

Course Learning Outcomes:

- The module aims to introduce students to the main concepts in public finance, equip students with a thorough analytical grasp of government taxes: direct and indirect taxes, and familiarise students with the main issues in government expenditure.
- At the end of the module the students should be able to demonstrate their understanding of the economic concepts of public finances, use diagrammatic analysis to demonstrate and compare the economic welfare effects of various government policy options, and demonstrate their understanding of the usefulness and problems related to government revenues and expenditures.

Course Outline

Unit-I:

Meaning and Scope of Public Finance: Introduction to Public Finance, Objectives and Scopes of Public Finance, Distinction between Private and Public Finance, Public Goods versus Private Goods, Externalities and Market Failure, Coase Theorem, the Scope of Government Activity and the Concept of a Mixed Economy.

Unit-II:

Principles of Taxation: What is a Tax? Distinguish between Tax Revenue and Non-tax Revenue, Classification of Taxes, Division of Tax Burden, Shifting of Taxes, Impact and Incidence of Taxes, Taxable Capacity, Effects of Taxation, Characteristics of a Good Tax System, Major Trends in Tax Revenue of the Central and the State Government in India. Benefit versus Ability to Pay Principles of Taxation, Degree of Progression bases of Taxation, Progressive versus Proportional Taxes.

Unit-III:

Public Expenditure and Public Debt: Meaning, Classification and Principle of Public Expenditure, Canon and Effects of Public Expenditure, Trends in Public Expenditure and Causes of Growth of Public Expenditure in India. Meaning of Public Debt, Public Debt and

Private Debt, Why Public Debt? Sources of Public Borrowing, External and Internal Borrowing, Effects of Public Debts, Methods of Debt Redemption and Growth of India's Public Debt.

Unit-IV:

The Public Budget: The Kinds of Budgets, Economic and Functional Classification of Budget, Classification of State Budgets, Different Concepts of Budget Deficits and Zero-Base Budgeting.

Unit-V:

Issues from Indian Public Finance: Working of Monetary and Fiscal Policies. Current Issues of India's Tax System. Fiscal Federalism in India, State and Local Finances.

References:

- R.A. Musgrave and P.B. Musgrave, *Public Finance in Theory & Practice*, McGraw Hill Publications, 5th edition, 2018.
- H. Rosen, T. Gayer: *Public Finance*, 9th ed., McGraw-Hill/Irwin, 2009.
- H. L. Bhatia: *Public Finance*, Vikas Publishing House, 29th edition, 2018.
- M. Maria John Kennedy: *Public Finance*, PHL Learning Private Limited, 2012.
- J. Hindriks, G. Myles: *Intermediate Public Economics*, MIT Press, 2006.
- Joseph E. Stiglitz, *Economics of the Public Sector*, W.W. Norton & Company, 3rd edition, 2000.
- John Cullis and Philip Jones, *Public Finance and Public Choice*, Oxford University Press, 1st edition, 1998.
- Y.V. Reddy and G.R. Reddy: *Indian Fiscal Federalism*, Oxford University Press, India, 2019.
- Mahesh Purohit, *Value Added Tax: Experiences of India and Other Countries*, 2007.
- M. Govinda Rao, *Changing Contours of Federal Fiscal Arrangements in India*, Amaresh Bagchi (ed.), *Readings in Public Finance*, Oxford University Press, 2005.
- Paul Samuelson, 1955, -Diagrammatic Exposition of a theory of Public Expenditure, *Review of Economics and Statistics*, Volume 37.
- Rangarajan and D.K. Srivastava, 2005, —Fiscal Deficit and Government Debt: Implications for Growth and Stabilization”, *Economic and Political Weekly*, July 2-8.
- M. Govinda Rao, 2011, -Goods and Services Tax: A Gorilla, Chimpanzee or a Genius like Primates?, *Economic and Political Weekly*, February 12-18.

Course Code : BEC316 Core/ Elective : Elective No. of Credits : 5	Course Title Environmental Economics
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Course Objective:

- This course focuses on economic causes of environmental problems.
- In particular, economic principles are applied to environmental questions viewed as externalities and their management through various economic institutions, economic incentives and other instruments and policies.
- Methods for analysing economic implications of environmental policy are also addressed as well as the valuation of environmental quality, assessment of environmental damages, and tools needed for the evaluation of projects such as cost-benefit analysis, and environmental impact assessments. Selected topics on international environmental issues are also discussed.

Course Learning Outcomes:

- The module aims to introduce students to the main theoretical and empirical concepts in environmental economics, equip students with a thorough analytical grasp of environmental policy theory, ranging from externalities to international environmental agreements, and familiarise students with the main issues in environmental valuation and with the basic features of the environmental policy tools.
- At the end of the module the students should be able to demonstrate their understanding of the economic concepts of environmental policy.

Course Outline

Unit-I:

Introduction: Concepts - Environmental and Ecological and natural resources Economics – Historical Perspectives (classical, neo-classical and modern) – Nature and Scope of Environmental Economics - The Environment and Economics Interactions – Environment and Development – Sustainable Development – Concept [renewable and non-renewable resources; need for public awareness; ecosystems: concepts and functions (forest, desert, grassland, aquatic)]

Unit-II:

The Theory Externalities: Pareto Optimality - Market Failures, Types of Public Goods and Externalities – Coase Theorem – Property Rights – Production and Management of Common Pool/Property Resources.

Unit-III:

Market and Non-Market based Approach to Environmental Issues: Environmental instruments – Moral suasion, property rights and liability laws - Command and Control –

(Direct regulations such as effluent & technology standard with enforcement) - Market based- Pigovian Tax - Emission taxes, subsidies and tradable permits- Quotas – Environmental Policy [Environmental pollution (air, water, soil, marine, noise, thermal, nuclear)]

Unit-IV:

Environmental Valuation: Values of Environment and Ecosystem- Use Value- Direct Use Value & Indirect Use Value - Option & Quasi-option value-Non-Use Value and Existence value (These values could be categorized as Provisioning, Regulating, Habitat and Cultural & Amenities)- Importance of Valuation – Total Economic Valuation Framework - Methods of Valuation – Revealed and Stated Preference Method – Contingent Valuation Method, Hedonic Pricing Method, Travel Cost Approach, Benefit Transfer Approach, Avoided Cost Method.

Unit-V:

A. Global Environmental Issues: Trans-boundary Environmental and Ecological Problems – Air Pollution – Water Pollution and Conflict – Forest – Fisheries – Climate Change and Global Warming – Trade and Environment

B. Social Issues and the Environment: Urban problems; Resettlement and rehabilitation; environmental ethics; evolution of environmental laws; institutions.

References:

- Bromley, D. W. (Ed.), *Handbook of Environmental Economics*. Blackwell, 1995.
- Dasgupta, P. S. and Maler, K. G. (Ed.), *Environment and Emerging Development Issues*. Cambridge University Press, 1997.
- IPCC, *Climate Change 2014: Synthesis Report*. IPCC, 2014.
- Kolstad, C. D., *Intermediate Environmental Economics*. Oxford University Press, 2010.
- Stern, N., *The Economics of Climate Change: The Stern Review*. CUP, 1st Edition, 2007.
- Common, M., *Environmental and Resource Economics: An Introduction*, Longman Group UK Limited, 319 pp, 1988.
- Mitchell, R. C. and Carson, R. T., *Using Survey to Value Public Goods: The Contingent Valuation Method*, Resource for the Future, 1989.
- Sankar, U. (Ed.), *Environmental Economics*. Oxford University Press, 469 pp, 2001.
- Conrad, J. M. and Clark, C. W., *Natural Resource Economics: Notes and Problems*, CUP, 1987.
- Husain, A., *Principles of Environmental Economics and Sustainability: An Integrated Economic and Ecological Approach*, Routledge, 3rd Edition, 2012.
- Field, B. and Field, M. K., *Environmental Economics: An Introduction*. McGraw Hill Education, 6th Edition, 2013.
- Costanza, R., et. al, *An Introduction to Ecological Economics*. CRC Press, 2nd Edition, 2014.
- Baumol, W. J. and Oats, W. E., *The Theory of Environmental Policy*. CUP, Re-Print, 1988.
- Thomas Sterner, *Policy Instruments for Environmental and Natural Resource Management*. 1st edition, Routledge, 2010.

Course Code : BEC317 Core/ Elective : Elective No. of Credits : 5	Course Title Agricultural Economics
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Course Objective:

- To provide exposure to the happenings in the Agricultural Economics and facilitate a better-informed decision making on the part of the learner

Course Learning Outcomes:

The expected outcome after learning this course is that the student will be able to:

- Understand the functioning of agro-economy and its inter-connection especially in context of Indian Economy.
- Know the various facets of agricultural studies.

Course Outline

Unit-I:

Introduction to Agricultural Economics: Introduction on Agri-economics. Nature and Scope of Agricultural Economics. Factors affecting agricultural development: technological, institutional and general. Interdependence between agriculture and industry.

Unit-II:

Production Function in Agriculture: Concept of production function: input-output and product relationship in farm production.

Unit-III:

Trends in Indian Agriculture: Growth and productivity trends in Indian agriculture. Agrarian reforms and their role in economic development with special reference to Indian Economy.

Unit-IV:

Farming System & Farm Size: Farming system in Indian Economy, farm size and productivity relationship in Indian agriculture. New agriculture strategy and Green revolution: Implementation, and its Impact.

Unit-V:

Emerging Concepts in Agricultural Economics: Sustainable development – Impact of Climate change on Indian agriculture - Sustainable water management in agricultural sector. Emerging of agro-industries in agribusiness enterprises.

Readings:

- Sadhu An, Singh Amarjit and Singh Jasbir, *Fundamentals of Agricultural Economics*. Himalaya Publishing House, Delhi 2, 2014.
- Lekhi R. K. and Singh Joginder, *Agricultural Economics*. Kalyani Publishers, 2015.
- Gardner, Bruce L and Gordon C Raussereds, *Handbook of Agricultural Economics*. North-Holland, chapter 1, 2000.
- Bhaduri, A., *The Economic Structure of Backward Agriculture*, Macmillan, Delhi, 1984.
- Dantwala, M.L. et.al, *Indian Agricultural Development Since Independence*. Oxford & IBH, New Delhi, 1991.
- World Bank, *Agriculture for Development reports*. Latest.
- Government of India, Planning Commission: “Risk Management in Agriculture”, 2007.
- Basu, Kaushik, *India’s Foodgrain Policy: An Economic Theory perspective*, in Uma Kapila Ed, *Indian Economy since Independence*, Academic Foundation, New Delhi, 2012.

SEMESTER-IV

Course Code : BEC401 Core/ Elective : Core No. of Credits : 5	Course Title Microeconomics-II
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Course Objective:

This course is a sequel to Microeconomics-I: The emphasis will be on giving conceptual clarity:

- The emphasis will be on giving conceptual clarity to the student coupled with the use of mathematical tools and reasoning.
- It covers general equilibrium and welfare, imperfect markets and topics under information economics.

Course Learning Outcomes:

After this, the students would be able to:

- Learn about equilibrium and welfare
- Develop the base for Game theory
- Apply the mathematical tools in Economic theory

Course Outline

Unit-I:

General Equilibrium, Efficiency and Welfare: Equilibrium and efficiency under pure exchange and production; overall efficiency and welfare economics.

Unit-II:

Market Structure and Game Theory: Monopoly; pricing with market power; price discrimination; peak-load pricing; two-part tariff; monopolistic competition and oligopoly; game theory and competitive strategy.

Unit-III:

Market Failure: Externalities; public goods and markets with asymmetric information.

Unit-IV:

Theory of Factor Pricing: Market for Factor Inputs (largely with reference to Labour): A Firm's and Market Demand for a labour (with one and several variable inputs) and its determinations. Supply of labour to a firm and the Market.

Unit-IV:

Equilibrium Wage Rate and Employment: Under Competitive Factor and Product Market; Monopolistic buyer of Labour and perfect competition in Labour market; imperfect competition in product market and Trade Union Monopoly; and bilateral monopoly.

References:

- Hal R. Varian, '*Intermediate Microeconomics: A Modern Approach*'. 8th Edition, W.W. Norton & Company, 2010.
- C. Snyder and W. Nicholson, *Fundamentals of Microeconomics*. Cengage Learning (India), 2010.
- Ross, Sheldon, *A first course in probability* / Sheldon Ross. 8th ed. p. cm. Pearson Education, Inc, 2010.
- B. Douglas Bernheim and Michael D. Whinston, *Microeconomics*. Tata-McGraw Hill (India), 2009.
- Pindyck, Robert and Rubinfeld, Daniel. '*Microeconomics*'. 9th edition, Pearson, 2018.
- Case, Fair and Oster, *Principles of Economics*. Prentice Hall, 11th edition, 2014.
- Lipsey, R.G. and Chrystal, K.A., *Economics*. Oxford University Press, 13th edition.
- Mankiw, N.G. *Principles of Economics*. Cengage Learning. 7th edition, 2015.
- Andreu Mas-Colell, Michael D. Whinston and Jerry, R. Green, '*Microeconomic Theory*'. Oxford University Press, 2012.
- Krugman, Paul and Wells, Robin, '*Microeconomics*'. 3rd edition, Worth Publishers, 2013.

Course Code : BEC402 Core/ Elective : Core No. of Credits : 5	Course Title Macroeconomics-II
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Course Objective:

This course is a sequel to Intermediate Macroeconomics-I. In this course, the students are introduced to:

- The long run dynamic issues like growth and technical progress.
- It also provides the micro-foundations to the various aggregative concepts used in the previous course.

Course Learning Outcomes:

After this, the students would be able to:

- Learn about long run dynamic issues like growth and technical progress
- Learn about how fiscal and monetary policies work
- Learn about different trade cycles theories

Course Outline

Unit-I:

Keynesian Multiplier: Concepts, Relation between Multiplier, MPC and MPS, Comparative Static and Dynamic Process. Working of Multiplier in UDC's. Acceleration Principle and Concept of Super Multiplier.

Unit-II:

Economic Growth: Harrod-Domar model; Solow model; golden rule; technological progress and elements of endogenous growth.

Unit-III:

Fiscal and Monetary Policy: Active or passive; monetary policy objectives and targets; rules versus discretion: time consistency; the government budget constraint; government debt and Ricardian equivalence.

Unit-IV:

Schools of Macroeconomic Thoughts: Classical; Keynesians; New-Classical and New-Keynesians.

Unit-V:

Trade Cycles: Meanings, Types, Phases and Theories of Trade Cycles (Hicks and Samuelson).

References:

Dornbusch, Fischer and Startz, *Macroeconomics*. McGraw Hill, 11th edition, 2010.
N. Gregory Mankiw. *Macroeconomics*. Worth Publishers, 7th edition, 2010.

- Felderer-Homburg, *Macroeconomics and New Macroeconomics*. Springer-Verlag, 2nd edition, 1987.
- Richard Froyen, *Macroeconomics*. Pearson Education Asia, 2nd edition, 2005.
- Olivier Blanchard, *Macroeconomics*. Pearson Education, Inc., 5th edition, 2009.
- Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*. Pearson Education, Inc. 7th ed, 2011.
- Errol D'Souza, *Macroeconomics*. Pearson Education, 2009.
- Charles I. Jones, *Introduction to Economic Growth*. W.W. Norton & Company, 2nd ed, 2002.
- Robert J. Gordon, *Macroeconomics*. Prentice-Hall India Limited, 2011.

Course Code : BEC403 Core/ Elective : Core No. of Credits : 5	Course Title International Trade
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Course Objective:

- The purpose of this course is to inform the basics of international trade theory and to examine the effects of international economic policies on domestic and world welfare.
- This course develops a systematic exposition of models that try to explain the composition, direction, and consequences of international trade, and the determinants and effects of trade policy.
- Although the course is based on abstract theoretical models, students will also be exposed to real-world examples and case studies.

Course Learning Outcomes:

- The module aims to introduce students to the main theoretical and empirical concepts in international trade, equip students with a thorough analytical grasp of trade theory, ranging from Ricardian comparative advantage to modern theories of intra-industry trade, and familiarize students with the main issues in trade policy and with the basic features of the international trading regime.
- At the end of the course, the students should be able to demonstrate their understanding of the economic concepts of trade theory.

Course Outline:

Unit-I:

Introduction: Introduction to international economics; An overview of world trade, Balance of Trade (BOT) and Balance of Payments (BOP), Trade vs. Protection.

Unit-II:

Theories of International Trade: Classical Theory: Adam Smith's theory of absolute cost difference, Ricardo's theory of comparative cost. The Neo-classical Theory: Heckscher-Ohlin Theory, Leontief Paradox, Rybczynski Theorem. New trade theories, the international location of production, firms in the global economy, outsourcing and multinational enterprises.

Unit-III:

Trade Policy: Instruments of trade policy, Tariff & Non-tariff Barriers, Stolper-Samuelson Theory, Political Economy of trade policy, controversies in trade policy.

Unit-IV:

International Macroeconomic Policy: Fixed versus flexible exchange rates, international monetary systems, SDR, financial globalization and financial crises, Role of IMF, WTO and IBRD in international trade.

Unit-V:

Globalization and Financial Crisis: The notion of globalization, historical changes, importance and issues; World financial crises- Lessons of the past.

References:

- Paul Krugman, Maurice Obstfeld, and Marc Melitz, *International Economics: Theory and Policy*. Addison-Wesley (Pearson Education Indian Edition), 9th edition, 2012.
- Dominick Salvatore, *International Economics: Trade and Finance*. John Wile International Student Edition, 10th edition, 2011.
- Bhagwati, J. N. (ed.): *International Trade: Selected Readings*. Cambridge University Press, Mass, 1981.
- Crockett, A.: *International Money: Issues and analysis*. The ELBS and Nelson, London, 1982.
- Greenaway, D.: *International Trade Policy*. Macmillan Publishers Ltd. London, 1983.
- Heller, H. R.: *International Monetary Economics*. Prentice Hall, India, 1968.
- Kenan, P. B.: *The International Economy*. Cambridge University Press, London, 1994.
- Kindlberger, C. P.: *International Economics*. R.D. Irwin, Homewood, 1983.
- Krugman, P. R. & M. Obstfeld: *International Economics: Theory and Policy*. Glenview, Foresman, 1994. (CTB)

Course Code : BEC404 Core/ Elective : SEC-II No. of Credits : 4	Course Title IT and R Programming for Economics
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Course Objective:

- To make students proficient in computer applications and statistical computing methods in Excel and R programming.
- To make students to apply application in economics modeling and able to do forecasting.

Course Learning Outcomes:

At the end of this course, the students should be able to:

- Reading data into R, accessing R packages, writing R functions, debugging, and organizing and commenting R code. Topics in statistical data analysis and optimization will provide working examples.

Course Outline

Unit-I:

Basic Operations of Excel: Spreadsheet basic operations: basic excel formulae; importing and exporting data; data cleaning; data visualization; data formatting and wrangling; excel functions; using external add-ins.

Unit-II:

Data Analysis Using Excel: Data analysis using Excel Data analysis tool pack: Random Number Generation, Calculating basic statistics; hypothesis testing; correlation and covariance analysis; regression modeling; ANOVA

Unit-III:

Introduction to R: Introduction to R: Primitive Object Types; Vectors; List; Matrices; Arrays; Factors; Data frames. Working with Data: Data preparation; basic data analysis; summary statistics; correlation and covariance; probability distributions.

Unit-IV:

Loops in R: Loops in R: for, while and if-else loops in R. Functions in R: functions vs. loops; application of R functions in hypothesis testing. Data analytics in R: Accessing external databases from R console; data extraction, visualization and cleaning; Introduction to Monte-Carlo simulation and Bootstrapping in R.

Unit-V:

Econometric Modeling in R: Econometric modeling in R: Constructing an OLS model. Pre-estimation and post estimation diagnostic testing, Forecasting. Time series in R: decomposing trends, seasonality and cyclical behavior. Interpolation methods.

References:

Bharti Motwani, *Data analytics with R*, (1st Edition), Wiley, 2019

Michael J Crawley, *The R Book*, (2nd Edition), Wiley, 2018

Gareth James et.al., *An Introduction to Statistical Learning: with Applications in R* (Springer Texts in Statistics), (7th Edition), Springer, 2017

Grant V Farnsworth, *Econometrics in R*, , eBook,

<https://cran.r-project.org/doc/contrib/Farnsworth-EconometricsInR.pdf>

https://www.tutorialspoint.com/r/r_mean_median_mode.htm

Course Code : BEC415 Core/ Elective : Elective No. of Credits : 5	Course Title Economics of Information
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Course Objective:

- To discuss the strategic behavior of economic actors when they do not have complete information about the problem at hand.
- To monitor the students to familiarized with concepts related to strategic behavior; information transmission; and signaling in economics.
- Practical aspects such as information management; IPR laws and open-source movement shall be discussed.

Course Learning Outcomes:

At the end of this course, the students should be able to:

- Discuss the strategic behavior of economic actors when they do not have complete information about the problem at hand.
- Familiarized with concepts related to strategic behavior; information transmission; and signaling in economics.

Course Outline

Unit-I:

Introduction to Concept of Information: Concept of information; differences between data and information; idea of noise; notion of time; various approaches to analyze information. characteristics of information goods; pricing of information goods; various pricing strategies; information and technology; revisiting the principal-agent problem; adverse selection; moral hazard; market for lemons

Unit-II:

Information Efficiency: Information Efficiency: revealing information through prices; market as an information processing mechanism; aggregating heterogeneous information; efficient market hypothesis and various forms of efficiency; introduction to game theory.

Unit-III:

Expectations in Economics: Information cascade; the macroeconomics of Information; expectations in economics: Rational expectation hypothesis; Adaptive expectations; introduction to behavioral economics.

Unit-IV:

Managing Information: Managing digital information: configuring information goods; bundling; unbundling and rebounding of information; strategies to learn customer preferences. Protecting information: digital rights management; the basic model of DRM

Unit-V:

Time Sensitivity of Information: Open source vs. proprietary content; the GNU and copy left movement; Creative Commons; time sensitivity of information: various aspects of time such as logical; mechanical and historical time in economics; time and financial markets.

References:

Carl Shapiro, Hal R Varian; *Information rules: a strategic guide to the network economy*. 1st Edition, Harvard Business School press, 1999

Pascal Pettit, *Economics of Information*. 1st Edition, Springer, 2001

Uris Birchler and Monica Butler, *Information Economics*. 1st Edition, Routledge, 2007

Inés Macho-Stadler and David Pérez-Castrillo, *An Introduction to the Economics of Information: Incentives and Contracts*. 2nd Edition, Oxford University Press, 2001

Course Code : BEC416 Core/ Elective : Elective/GE No. of Credits : 5	Course Title Economic History of India (1857-1947)
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Course Objectives:

- This course analyses key aspects of Indian economic development during the second half of British colonial rule.
- Investigates the place of the Indian economy in the wider colonial context, and the mechanisms that linked economic development in India to the compulsions of colonial rule.
- This course links directly to the course on India's economic development after independence in 1947.

Course Learning Outcomes:

After this, the students would be able to

- The course develops critical analytical skills and exposes students to understanding the intricacies of India's economic, political and social developments both in the past and present times.

Course Outline

Unit-I:

Introduction: Background and Introduction; Colonial India; overview of colonial economy.

Unit-II:

Macro Trends: National Income; population; occupational structure.

Unit-III:

Agriculture: Agrarian structure and land relations; agricultural markets and institutions – credit, commerce and technology; trends in performance and productivity; famines.

Unit-IV:

Railways and Industry: Railways; the de-industrialisation debate; evolution of entrepreneurial and industrial structure; nature of industrialisation in the interwar period; constraints to industrial breakthrough; labor relations.

Unit-V:

Economy and State in the Imperial Context: The imperial priorities and the Indian economy; drain of wealth; international trade, capital flows and the colonial economy – changes and continuities; government and fiscal policy.

References:

- Lakshmi Subramanian, *History of India 1707-185.*, Orient Blackswan, , Chapter 4., 2010.
- Irfan Habib, *Indian Economy 1858-1914.* (A People's History of India), Vol.28, Tulika, 2006.
- Tirthankar Roy, *The Economic History of India 1857-1947.* Oxford University Press, 3rd edition, 2011.
- J. Krishnamurty, *Occupational Structure*, Dharma Kumar (editor), The Cambridge Economic History of India. Vol. II, (henceforth referred to as CEHI), Chapter 6, 2005.
- L. Visaria and P. Visaria, *Population.* CEHI, Chapter 5.
- Ira Klein, When Rains Fail: Famine relief and mortality in British India ||, *IESHR* 21, 1984.
- Jean Dreze, *Famine Prevention in India in Dreze and Sen (eds.) Political Economy of Hunger*, WIDER Studies in Development Economics., pp.13- 35., 1990.
- John Hurd, *Railways*, CEHI, Chapter 8, pp.737-761.
- Rajat Ray (ed.), *Entrepreneurship and Industry in India*, 1994.
- AK Bagchi, Deindustrialization in India in the nineteenth century: Some theoretical implications, *Journal of Development Studies*, 1976.
- MD Morris, *Emergence of an Industrial Labour Force in India*, OUP 1965, Chapter 11, Summary and Conclusions.
- K.N. Chaudhuri, *Foreign Trade and Balance of Payments*, CEHI, Chapter 10.
- B.R. Tomlison, 1975, *India and the British Empire 1880-1935*, IESHR, Vol.XII.
- Dharma Kumar, *The Fiscal System*, CEHI, Chapter 12.
- Basudev Chatterjee, *Trade, Tariffs and Empire*, OUP 1992, Epilogue.
- Sumit Guha, 1991, Mortality decline in early 20th century India', *Indian Economic and Social History Review (IESHR)*, pp 371-74 and 385-87.

Course Code : BEC417 Core/ Elective : Elective No. of Credits : 5	Course Title Applied Econometrics
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Course Objective:

- To provide a foundation in applied econometric analysis and develop skills required for empirical research in economics.
- To make practice knowledge of regression models, dynamic econometric models, panel data and qualitative response models.
- To expose the students to understand the econometric software and computing skills.

Course Learning Outcomes:

- Students will learn the theoretical basis for techniques widely used in empirical research and consider their application in a wide range of problems.

Course Outline

Unit-I:

Methodology of Econometric Research: Introduction to Stages in Econometric Research – Specification of the Model – Estimation of the Model – Evaluation of Estimates – Evaluation of the Forecasting Power of the Estimated Model – Desirable Properties of an Econometric Model

Unit-II:

Econometric Modeling: Model Specification and Diagnostic Testing: Model Selection Criteria – Types of Specification Errors – Consequences of Model Specification Errors – Tests of Specification Errors – Errors of Measurement – Incorrect Specification of the Stochastic Error Term – Nested versus Non-Nested Models – Tests of Non-Nested Hypotheses – Model Selection Criteria for Forecasting Purposes – Additional Topics in Econometric Modeling.

Unit-III:

Dynamic Econometric Models: The Role of Time or Lag in Economics – Reasons for Lags – Estimation of Distributed Lag Models – The Koyck Approach to Distributed Lag Models – Rationalisation of the Koyck Model – Estimation of Autoregressive Models – The Method of Instrumental Variables – Detecting Autocorrelation in Autoregressive Models (Durbin h Test) – Almon Approach to Distributed Lag Models – Causality in Economics (The Granger Causality Test).

Unit-IV:

Panel Data and Qualitative Response Regression Models: Use of Panel Data in Economic Research – Pooled OLS Regression Model – Fixed Effect Least Square Dummy Variable

Model – Fixed Effect Within Group Model – Random Effects Model – The Nature of Qualitative Response Models – The Linear Probability Model – The Logit Model – The Probit Model – The Tobit Model

Unit-V:

Introduction to Econometric Software Package: GRETL; E-VIEWS; STATA (any one).

References:

- Jeffrey M. Wooldridge, *Econometrics*. CENGAGE learning, India Edition, 2013/Latest.
- Damodar N Gujarati, *Basic Econometrics*. 5th Ed, Tata McGraw-Hill, 2012.
- Dimitrios Asteriou and Stephen Hall, *Applied Econometrics: A Modern Approach*. Palgrave Macmillan, 2007.
- Damodar Gujarati, *Econometrics by Example*. Palgrave Macmillan, 2014.
- A. Koutsoyiannis, *Theory of Econometrics*. Second Edition, Palgrave Publishers Ltd, (Latest).
- Wooldridge, J. M., *Introductory Econometrics: An Introductory Approach*. South-Western, Cengage Learning, 5th Ed, 2013
- Studenmund A. H., *Using Econometrics: A practical Guide*. Pearson Education, 7th Ed, 2017.
- Stock, J. H. and Watson, M. W., *Introduction to Econometrics*. Pearson, 3rd Ed, 2015.
- Brooks, C., *Introductory Econometrics for Finance*. Cambridge University press, 4th Ed, 2019
- Baum, C. E., *An Introduction to Modern Econometrics Using Stata*. Stata Press, 2006.

SEMESTER-V

Course Code : BEC501 Core/ Elective : Core No. of Credits : 5	Course Title Indian Economy-I
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Course Objective:

- Using appropriate analytical frameworks, this course reviews major trends in economic indicators and policy debates in India in the post-Independence period, with particular emphasis on paradigm shifts and turning points.
- Given the rapid changes taking place in India, the reading list will have to be updated annually.

Course Learning Outcomes:

After this, the students would be able to:

- This course will help students understand the key issues related to the Indian economy.
- Review major trends in major economic indicators.
- Learn about major economic developments since independence.

Course Outline

Unit-I:

Economic Development since Independence: Major features of the economy at independence; growth and development under different policy regimes—goals, constraints, institutions and policy framework; an assessment of performance—sustainability and regional contrasts; structural change, savings and investment.

Unit-II:

Rural Institutions and Infrastructure: Rural Institutional Set-up and its Impact on the Process of Rural Development in India: Panchayati Raj Institutions, Village Co-operatives, Gender Issues and Rural Development in India. Rural Infrastructure in India: Rural Roads, Banks, Drinking Water Supply and Sewerage System, Electricity, Educational facilities and Healthcare facilities, and Marketing Networks.

Unit-III:

Growth and Distribution: Trends and policies in poverty; inequality and unemployment: types and consequences.

Unit-IV:

International Comparisons: Major indicators of economy within the regional groups (SAARC, ASEAN, BRICS)

Unit-V:

Poverty and unemployment in India: Programmes for eradication of poverty and unemployment with special reference to the post – reform era.

References:

Agarwal, A.N. *Indian Economy*. Vikash Publishing Co. Delhi, (Latest Edition).

Datt, R. and K.P.M. Sundaram *Indian Economy*. S. Chand and Co. New Delhi, (Latest Edition).

V.K. Puri S.K. Misra, *Indian Economy*, 36th Ed, Himalaya Publishing House, 2018.

Gupta, S.B. (Latest Edition): *Monetary Planning in India*, Oxford University Press, Delhi, (Latest Edition).

Jean Dreze and Amartya Sen, *An Uncertainty Glory: India and its Contradictions*. Princeton University press, 2013.

Ramesh Singh, *Indian Economy for Civil Services, Universities and Other Examinations* (11th edition), Mc Graw Hill Education (India) Private Limited, 2019.

Uma Kapila, *Indian Economy Performance and Policies*, 20th Edition, Academy Foundation, 2019.

Pulapre Balakrishnan, The Recovery of India: Economic Growth in the Nehru Era, *Economic and Political Weekly*, November, 2007.

Rakesh Mohan, Growth Record of Indian Economy: 1950-2008. A Story of Sustained Savings and Investment, *Economic and Political Weekly*, May, 2008.

Course Code : BEC502 Core/ Elective : Core No. of Credits : 5	Course Title Development Economics-I
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Course Objective:

- To Introduce the development economics, and then proceeds to study comparative economic development.
- To explain the theories of economic development, models of economics growth and technical progress.
- To discuss the poverty and inequality associated issues.

Course Learning Outcomes:

- This course introduces students to the basics of development economics, with in-depth discussions of the concepts of development, growth, and poverty and inequality.

Course Outline

Unit-I:

Introduction to Development Economics: Concepts and Approaches of Development Economics; Economic Growth vs. Economic Development; Measurement of Economic Development; Human Development Indices; Obstacles to Economic Development; Sustainable Development.

Unit-II:

Comparative Economic Development: Defining the Developing World; Basic Indicators of Development: Real Income, Health, and Education; Universal Measures of Living Levels and Capabilities; Characteristics of the Developing World.

Unit-III:

Theories of Economic Development: Adam Smith, Ricardo, Marx, Schumpeter, Rostow, Balanced & Unbalanced Growth, Big Push Approach.

Unit-IV:

Models of Economic Growth and Technical Progress: Harrod-Domar, Solow, Robinson, Kaldor Growth models, and Disembodied & embodied and endogenous growth models.

Unit-V:

Poverty and Inequality: Definitions and Measures of Poverty; Mechanisms that generate poverty traps and path dependence of growth processes; Connections between inequality and development; Million Development Goals.

References:

- Debraj Ray, *Development Economics*. Oxford University Press, 2009.
- Michael P. Todaro and Stephen C. Smith, *Economic Development*. Pearson Publications, 2015.
- Jhingan M. L., *The Economics of Development and Planning*. Vrinda Publications (P) Ltd.2012.
- Partha Dasgupta, *Economics, A Very Short Introduction*. Oxford University Press, 2007.
- Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, *Understanding Poverty*. Oxford University Press, 2006.
- Kaushik Basu, *The Oxford Companion to Economics in India*. OUP, 2007.
- Amartya Sen, *Development as Freedom*. OUP, 2000.
- Daron Acemoglu and James Robinson, *Economic Origins of Dictatorship and Democracy*, Cambridge University Press. 2006.
- Robert Putnam, *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton University Press, 1994
- Subrata Ghatak, *Introduction to Development Economics*. Routledge, London and New York, 2005

Course Code : BEC503 Core/ Elective : Core No. of Credits : 5	Course Title Research Methodology
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Course Objectives:

- The course intends to orient the students towards the basics of research, process of research.
- To enable a student to choose a method appropriate to one's own research problem.
- To train the student in certain basic elements and the craft of project report writing with a view to improve its overall quality.

Course Learning Outcomes:

At the end of this course, the students should be able to:

- Understand some basic concepts of research and its methodologies
- Identify appropriate research topics and also define appropriate research problem and parameters
- Prepare a project proposal (to undertake a project)

Course Outline

Unit-I: Introduction

Meaning of Research - Types of Research - Research Process - Criteria of Good Research and Ethics –Research Methods versus Methodology-Problems Encountered by Researchers in India.

Unit-II: Methodology

Review of Literature - Research Gap - Research Problem –Research Design and its types-Features of a good research design- Objectives – Scope – Hypothesis – Limitations - Identifying Methodology.

Unit-III: Sampling and Sampling Techniques

Sampling - Sample Size - Sampling Techniques –census and sample survey- Sample Design-Preparation of Questionnaire -Measurements of scaling- Sources of error in measurement

Unit-IV: Data Collection Methods and Analysis

Data Collection –Primary Data- Secondary data- Qualitative Data - Quantitative Data - Data Analysis and Interpretation - Statistical Tools for Data Analysis - Introduction to SPSS/EViews

Unit-V: Report Writing

Preparation of Report – steps of writing report-layout of research report- Referencing Styles – Annexures- Bibliography.

References:

William J. Goode and Paul K. Hatt, *Methods in Social Research*, Surjeet Publications. ISBN: 978-81-229-0501-4 Paperback, (Latest).

Ranjit Kumar, *Research Methodology: A Step-by- Step Guide for Beginners*. 4th Edition, SAGE Publications, (Latest)

Cooper and Schindler, *Business Research Methods*. McGraw Hill, 2010

Panneerselvam, R., *Research Methodology*. Prentice Hall of India, 2006.

Kumar, R, *Research Methodology: A Step-by-Step Guide for Beginners*. Sage, 2014.

Phanse, S, *Research Methodology: Logic, Methods, and Cases*, OUP, 2016.

Uwe Flick. *Introducing Research Methodology: A Beginner's Guide to Doing a Research Project*, Sage Publications, 2012.

Course Code : BEC504 Core/ Elective : SEC-III No. of Credits : 4	Course Title Internship
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Course Description:

Students who have completed Semester IV must participate in an internship programme for a minimum of 4 weeks during the semester break before commencement of Semester V.

This experience is meant to expose students to the professional environment and apply concepts studied in the classroom to the real world, so that they understand the power and limitations of theoretical models. The reports that students will write on a regular basis are an important element in the evaluation for this course. Originality of content and adherence to deadlines are both to be taken seriously. Each student will submit at least 4 individual reports – a Preliminary Report, 2 to 4 Weekly Reports, and a Concluding Report – which will account for a total of 60 marks.

Each student will make a final internship presentation to a panel of internal and external evaluators. This session will include an in-depth discussion, when the panel members will evaluate the level of commitment of the students and the learning achieved. This presentation will account for 40 marks. A student must earn at least 40 marks out of the total of 100 (40% of 100) to clear the internship component of the course.

Course Code : BEC515 Core/ Elective : DSE No. of Credits : 5	Course Title Money and Financial Markets
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Course Objective:

- To exposes students to the theory and functioning of the monetary and financial sectors of the economy.
- To highlights the organization, structure and role of financial markets and institutions.
- To discuss financial and banking sector reforms and monetary policy with special reference to India are also covered.

Course Learning Outcomes:

- This allows students to understand current monetary policies and financial market outcomes.
- It also enables them to critically evaluate policies.

Course Outline:

Unit I: Money

The Concept of money, function and measurement; theories of money supply determination, Basel - I, II and III norms.

Unit II: Money- Financial Institutions, Markets, Instruments and Financial Innovations

(a) Role of financial markets and institutions; problem of asymmetric information – adverse selection and moral hazard; financial crises. (b) Money and capital markets: organization, structure and reforms in India; role of financial derivatives and other innovations.

Unit III: Interest Rates

Determination; sources of interest rate differentials; theories of term structure of interest rates; interest rates in India.

Unit IV: Banking System

(a) Balance sheet and portfolio management. (b) Indian banking system: Changing role and structure; banking sector reforms.

Unit V: Central Banking and Monetary Policy

Functions, balance sheet; goals, targets, indicators and instruments of monetary control; monetary management in an open economy; current monetary policy of India.

Reference:

F. S. Mishkin and S. G. Eakins, *Financial Markets and Institutions*. Pearson Education, 6th edition, 2009.

- L. M. Bhole and J. Mahukud, *Financial Institutions and Markets*. Tata McGraw Hill, 5th edition, 2011.
- M. R. Baye and D. W. Jansen, *Money, Banking and Financial Markets*. AITBS, 1996
- F. J. Fabozzi, F. Modigliani, F. J. Jones, M. G. Ferri, *Foundations of Financial Markets and Institutions*. Pearson Education, 3rd edition, 2009.
- Rakesh Mohan, *Growth with Financial Stability- Central Banking in an Emerging Market*. Oxford University Press, 2011.
- M. Y. Khan, *Indian Financial System*. Tata McGraw Hill, 7th edition, 2011.
- N. Jadhav, *Monetary Policy, Financial Stability and Central Banking in India*. Macmillan, 2006.
- R.B.I. – *Report of the Working Group: Money Supply Analytics and Methodology of Compilation*. 1998.
- R.B.I. Bulletin, Annual Report and Report on Currency and Finance (latest).

Course Code : BEC516 Core/ Elective : DSE No. of Credits : 5	Course Title Behavioural Economics
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Course Objective:

- To equip students with fundamentals of behavioural economics and also expose them to practical applications.

Course Learning Outcomes:

- The course will enhance the understanding regarding the behavioural traits and explanation of complex economic phenomenon.

Course Outline

Unit-I:

Foundations of Behavioural Economics: Nature of Behavioural Economics - Behavioural Economics: Past, Present and Future - Rationality Assumptions and Behaviour - Methodological Approach – Origins of Behavioural Economics – Neo-Classical and Behavioral Approaches to Studying Economics - Perspective on Psychology and Economics - Kahneman and Behaviouralism.

Unit-II:

Preferences, Choices and Decision Making: Values, Preferences and Choices - Choice Under Uncertainty – The Standard Model - Axioms, Assumptions and Definitions - The Neuro-Scientific Basis of Utility - Decision Making Under Risk and Uncertainty: Prospect Theory - Reference Points - Risk Concept and Understanding – Loss Aversion – Shape of Utility Function – Decision Weighting – Probabilistic Judgment.

Unit-III:

Beliefs, Heuristics and Biases: The Standard Model: Probability Estimation - Self-Evaluation Bias – Projection Bias - Causes of Irrationality - Behavioural Law and Economics – Selection Among Multiple Strict Equilibria Via Structure, Framing, Fairness, Complexity

Unit-IV:

Revealed Preference: Belief - Game Theory - Nature and Components of Mental Accounting – Framing and Editing – Budgeting and Fungibility – Choice Bracketing and Dynamics – Time Discounting.

Reference:

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

Course Code : BEC517 Core/ Elective : DSE No. of Credits : 5	Course Title Economics of Health and Education
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Course Objective:

- To introduce the study of health and education as components of human capital in the framework of economic theory.

Course Learning Outcomes:

- The students will learn the role of health and education in human development.
- They will be able to apply economic theory to understand the demand for health care, market failure in health insurance, economic evaluation of health care programmes and the role of public policy in the healthcare industry.
- They will also learn to analyse the returns to education, its role in labor market signaling, and the progress of schooling in India.

Course Outline

Unit I:

Role of Health and Education in Human Development: Importance in poverty alleviation; health and education outcomes and their relationship with macroeconomic performance.

Unit II:

Microeconomic Foundations of Health Economics: Demand for health; uncertainty and health insurance market; alternative insurance mechanisms; market failure and rationale for public intervention; equity and inequality.

Unit III:

Health Sector in India: Evaluation of health programs health sector in India; costing, cost effectiveness and cost-benefit analysis; burden of disease; health outcomes; health financing.

Unit IV:

Investment in Human Capital: Rate of return to education: private and social; quality of education; signaling or human capital; theories of discrimination; gender and caste discrimination in India.

Unit V:

Education Sector in India: An Overview-Literacy rates, school participation, school quality measures.

References:

- William, Jack, *Principles of Health Economics for Developing Countries*. World Bank Institute Development Studies, 1999.
- World Development Report, Investing in Health. The World Bank, 1993.
- Ronald G., Ehrenberg and Robert S., Smith, *Modern Labor Economics: Theory and Public Policy*. Addison Wesley, 2005.
- Bhattacharya, J., Hyde, T., Tu, P, *Health economics*, Palgrave Macmillan, 2014.
- World Health Organisation, *The economics of the social determinants of health and health inequalities: A resource book*. World Health Organisation, 2013/Latest

SEMESTER-VI

Course Code : BEC601 Core/ Elective : Core No. of Credits : 5	Course Title Indian Economy-II
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Course Objective:

- This course examines sector-specific policies and their impact in shaping trends in key economic indicators in India.
- It highlights major policy debates and evaluates the Indian empirical evidence. Given the rapid changes taking place in the country, the reading list will have to be updated annually.

Course Learning Outcomes:

After this, the students would be able to:

- Learn about trends and performances in agriculture, industry and services sectors.
- Learn about economic reform policies.

Course Outline

Unit-I:

Macroeconomic Policies and Their Impact: Fiscal Policy; trade and investment policy; financial and monetary policies; labour regulation.

Unit-II:

Policies and Performance in Agriculture: Growth; productivity; agrarian structure and technology; capital formation; trade; pricing and procurement.

Unit-III:

Policies and Performance in Industry: Growth; productivity; diversification; small scale industries; public sector; competition policy; foreign investment.

Unit-IV:

Trends and Performance in Services: Banking Reforms since 1991 and telecommunications. .

Unit-V:

Economic Reforms: Features of Economic reforms and structural adjustment programme: Liberalization, Privatization and Globalization, appraisal of Economic reform programme.

Reference:

- Agarwal, A. N., *Indian Economy*. Vikash Publishing Co. Delhi, Latest Edition
- Datt, R. and K. P. M. Sundaram, *Indian Economy*. S. Chand and Co. New Delhi, Latest Edition.
- Misra, S. K. and V. K. Puri, *Indian Economy*. Himalayas Publishing Co. Mumbai, Latest Edition
- Gupta, S.B. *Monetary Planning in India*. Oxford University Press, Delhi, Latest Edition
- Jean Dreze and Amartya Sen, *An Uncertainty Glory: India and its Contradictions*. Princeton University Press, 2013.
- Bagchi and Banerjee, *Change and Choice in Indian Industry*. K.P. Bagchi and Co, 1981.
- Shankar Acharya, Macroeconomic Performance and Policies 2000-8,|| in Shankar Acharya and Rakesh Mohan, editors, *India's Economy: Performances and Challenges: Development and Participation*, Oxford University Press, 2010.
- Rakesh Mohan, India's Financial Sector and Monetary Policy Reforms,|| in Shankar Acharya and Rakesh Mohan, editors, *India's Economy: Performances and Challenges: Development and Participation*, Oxford University Press, 2010.
- Pulapre Balakrishnan, Ramesh Golait and Pankaj Kumar, Agricultural Growth in India Since 1991, *RBI DEAP Study no. 27*, 2008.

Course Code : BEC602 Core/ Elective : Core No. of Credits : 5	Course Title Development Economics-II
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Course Objective:

- To introduce the important of demography, human development and human capital for the economic development.
- To explain the link between environment and economic develop, and globalization and economic development.

Course Learning Outcomes:

- This course teaches the student various aspects of social sector in the international and national economics view point, as well as important themes relating to the environment and sustainable development.
- It also introduces them to some issues of globalization and international financial institutions.

Course Outline

Unit-I:

Demography and Development: Demographic concepts; Birth and death rates, age structure, fertility and mortality; Demographic transitions; Gender bias and unequal treatment; Connections between income, mortality, fertility choices and human capital accumulation; Migration.

Unit-II:

Health and Education: Role of health and education in human development; Health sector in India - health outcome; health systems; health financing. Education sector in India- literacy rates, school participation, school quality measures.

Unit-III:

Environment and Sustainable Development: Defining sustainability for renewable resources; A brief history of environmental change; Common - pool resources; Environmental externalities and state regulation of the environment; Economic activity and climate change.

Unit-IV:

Globalization: Globalization in historical perspective; The economics and politics of multilateral agreements; Trade, production patterns and world inequality; Financial instability in a globalized world.

Unit-V:

Foreign Investment, IMF and World Bank: Foreign Capital/Foreign Direct Investment (FDI), government policy, foreign aid, different forms of foreign investment and their roles in economic development; Role of IMF and World Bank in economic development of the LDCs.

Reference:

Debraj Ray, *Development Economics*. Oxford University Press, 2009.

Michael P. Todaro and Stephen C. Smith, *Economic Development*. Pearson Publications, 2015.

Jhingan M. L., *The Economics of Development and Planning*. Vrinda Publications (P) Ltd.2012.

Kaushik Basu, *Analytical Development Economics*. OUP

Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, *Understanding Poverty*. Oxford University Press, 2006.

Amartya Sen, *Development as Freedom*. OUP, 2000.

Michael D. Bordo, Alan M. Taylor and Jeffrey G. Williamson (ed.), *Globalization in Historical Perspective*. University of Chicago Press, 2003.

Dani Rodrik, *The Globalization Paradox: Why Global Markets, States and Democracy Can't Coexist*. Oxford University Press, 2011.

Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press, 1990.

Raghuram Rajan, *Fault Lines: How Hidden Fractures Still Threaten the World Economy*, 2010.

William, Jack, *Principles of Health Economics for Developing Countries*. World Bank Institute Development Studies, 1999.

World Development Report, *Investing in Health*. The World Bank, 1993.

Course Code : BEC603 Core/ Elective : Core No. of Credits : 5	Course Title Research Project
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Research Project Course Description

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

Faculty Allotment for the Research Project

Faculty allotment for the internal advisory/guidance is based on student selected topic/area of interest and availability of faculty in the department as well.

Evaluation of the Research Project

There are *two* stages of evaluation process involved -before student get final marks and grades.

1. Viva Voice Examination

Each student must present his/her research project once it completed and submitted to the department. The evaluation has to done by both internal advisor and an external expert. The viva-voice examination carries 40 marks and these marks are divided into five categories; (i) Communication Skills, (ii) Clarity of Thought, (iii). Body Language, (iv) Ability to Answer Questions, and (v) Overall Impression. Each category carries 8 marks. At the end, both internal advisor and external expert allotted marks shall combine and take an averages marks for the viva-voice.

2. Evaluation of Research Project Report

Each student needs to submit final dissertation to the department, after clearance is granted – based on the written dissertation. The evaluation of research project carries 60 marks. Both internal advisor and external expert allotted marks shall combine and take an averages marks for the research project report.

Consolidated Evaluation

The concerned department shall consolidate both viva-voice examination, and evaluation research project report marks and submit to the controller of examinations.

Course Code : BEC615 Core/ Elective : DSE No. of Credits : 5	Course Title Indian Financial System
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Course Objective:

- To focus on the importance of various financial institutions in India's economy.
- To expose students to the working of these institutions, changes in their relative importance over time, role of regulations in financial intermediation, and the problems affecting the financial sector while focusing on their relevance to the transmission of monetary policy.

Course Learning Outcomes:

At the end of the course, students will be able to:

- Outline the structure and functions of the Indian financial system.
- Illustrate the functioning of financial market and government security market in the development of Indian financial system.
- Evaluate the functioning of different financial institutions

Course Outline

Unit-I:

Introduction: Role of the Central Bank, reserve money and money supply, direct and indirect finance, financial intermediation - Components of a formal financial system: functions - Elements of well-functioning system - Nature and Role of Financial Institutions and Financial Markets

Unit-II:

Reforms in Financial System in India: Constituents of Indian Financial system, Financial Institutions, Financial Markets, Financial Services, Financial Instruments - Changing nature of the global financial system: growth of shadow banking - Emergence of fin-tech and challenges - Foreign ownership restrictions: FII/ FDI policy - The government-financial sector nexus: too-big-to-fail, recapitalization, government borrowings.

Unit-III:

Financial Institutions and Financial Products: Development financial institutions; Banking and non-banking institutions – objectives, structure, functions, role and specific policies of RBI, NABARD, IDBI, FFCI, FDBI, ICICI, SIDBI, SFC's, NSDL, CSDL; Mutual funds; Insurance; Micro-finance; Payments banks; Small finance banks; Rating agencies.

Unit-IV:

Financial Regulations: Central Bank-bank regulations; Non-banking regulations-SEBI, FEMA, IRAI; Market regulation; Forex market; Transmission mechanism; Interest rate:

nominal and real interest rate; Shadow banking; Role of money lender-Financial Inclusion; Role of capital in financial intermediation; Basel rules and their implementation in India.

Unit-V:

Issues in India's Financial system: High levels of NPA historical and current; Recovery and asset reconstruction ecosystem; Insolvency and Bankruptcy Code, 2016 with latest amendments; Under-penetration of credit in SME sector; Role of frauds; Consumer protection: mis-selling of MFs/ insurance policies.

Textbooks:

Pathak, B. V., *"The Indian Financial System: Markets, Institutions and Services"*, Pearson Education, 2nd Edition, 2010.

Bhole, L. M. and Mahukud, J., *"Financial Institutions and Markets"*, Tata McGraw-Hill, 5th Edition, 2011.

Khan, M. Y., *"Indian Financial System"*, Tata McGraw-Hill, 7th Edition, 2011.

RBI Publications: Monthly Bulletin, Financial Stability Report, Report on Trends and Progress of Banking in India, Weekly Statistical Supplement

Annual Reports of RBI, NABARD, SIDBI, SBI and HDFC Life Insurance Company

Factsheets of debt & equity schemes of Franklin Templeton Asset Management Company.

Course Code : BEC616 Core/ Elective : DSE No. of Credits : 5	Course Title Strategy and Game Theory
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Course Objective:

- The course seeks to reinforce basic concepts in microeconomics and apply them to the world of business, strategy and decision making.

Course Learning Outcomes:

At the end of this course, the students should be able to:

- Applied in nature, and bases itself extensively on case studies, real world problems and project work from both the corporate world as well as academia.

Course Outline

Unit-I:

Introduction: An overview of microeconomic models relevant to game theory - an introduction to the motivation for game theory - revisiting the prisoner's dilemma - the 2x2 form standard model - dominance - Nash equilibrium – SPNE.

Unit-II:

Zero sum games: general sum games - the coordination problem - cooperative games - non-cooperative games - decision making and uncertainty - reciprocative decision making - case studies

Unit-III:

Voting theory: voting strategies - auctions - types of auctions - auction design - elicitation - scoring rules - adaptive decision making.

Unit-IV:

Case studies: pricing, marketing, strategy, HR, finance, taxation, dominant assurance contracts, compliance, incentive design.

Reference:

Avinash Dixit and Barry J. Nalebuff, *The Art of Strategy: A Game Theorist's Guide to Success in Business & Life*. W. W. Norton & Company; Illustrated edition, 2010.

Avinash K. Dixit, Susan Skeath, David H. Reiley Jr., *Games of Strategy*. W. W. Norton & Company, 2004.

William Spaniel, *Game Theory 101: The Complete Textbook*, CreateSpace Independent Publishing Platform, 2014.

Ivan Pastine, Tuvana Pastine and Tom Humberstone, *Introducing Game Theory: A Graphic Guide*, Icon Books Ltd, 2017.

Course Code : BEC617 Core/ Elective : DSE No. of Credits : 5	Course Title Political Economy
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Course Objective:

- To understand how goods and services are produced, exchanged, and distributed among the members of society.
- Incomes and wealth are generated through these processes of production, exchange, and distribution.

Course Learning Outcomes:

At the end of this course, the students should be able to:

- Articulate how it is possible that even when a majority of voters is opposed to a policy, politicians will adopt the policy.
- Articulate the concepts of the form of government and the scope of government. For example, the form may be democracy, but if the scope is unlimited – i.e., if a majority can enact whatever it wants without constitutional restraint – we have what Jefferson called an "elective despotism."
- Articulate the historical and logical implications of different property rights regimes.
- Articulate the phenomenon called the "tragedy of the commons" and the implications of the variety of solutions that have been offered to this problem.
- Articulate how economic theory can be applied in a wide variety of areas other than business – e.g., crime, the family, education and traffic congestion.

Course Outline

Unit-I:

Introduction to Political Economy: Political Economy- Concepts, Theories of Political Economy, Perspectives of Political Economy, Modern Political Economy. Classical political approach of Smith, Ricardo and Marx; criticism; Economic thoughts of Gandhi, Nehru, Gokhle, Netaji, and Rabindranath; criticism.

Unit-II:

Political System: Basic features and functioning of the Physiocracy, Mercantilism, Feudalism, Capitalism and Socialism. *Social Transition:* Feudalism to Capitalism; Capitalism to Socialism; Stages of Growth: Marx & Rostow.

Unit-III:

Analysing The Social Changes-I: The method of historical materialism; Marxian theory of value, Quantitative and qualitative aspect of value; Components of value, Value of Constant and variable capital; Surplus value, Circuit of capital, surplus value and organic composition of capital Commodity fetishism; the reserve army of labour .

Unit-IV:

Analysing the Social Changes-II: The method of historical materialism; Simple reproduction. The law of falling rate of profit, Theories of crises: The under consumption crises, realization crises and disproportionality crises. Emergence of socialism; social mode of extraction of surplus value; socialist pricing.

Unit-V:

The State and the Economy: Contestation and mutual interdependence, the state as an arena of conflict; imperialism - the basic foundations.

References:

J. Gurley. *The materialist conception of history*. Ch.2.1 in R. Edwards, M. Reich and T. Weisskopf (ed.), *The Capitalist System*, 2nd edition, 1978.

O. Lange, *Political Economy*. vol. 1, Chapters 1 & 2., Springer, 1963.

E.K. Hunt, *History of Economic Thought*. M.E. Sharpe, Indian edn, Shilpi Publications, 2004.

Irfan Habib, *Capitalism in history*. *Social Scientist* vol 23:15-23, 1995.

Vamsi Vakulavararam, The recent crises in global capitalism. Towards a Marxian Understanding, *EPW*, march28, vol 44, 144-150, 2009.

Anwar Shaikh Entries on *Economic crises*” and *falling rate of profit* in T. Bottoore et al {eds), *The dictionary of Marxian Thought*, OUP, Indian edition, Maya blackwe, 2000.

J. Shumpiter, *Capitalism, Socialism and democrac*. George Allen and Unwin, Ch 6,7 and 8, 1976.