

Department of Economics

Curriculum of BSc (Hons)/ BSc (Hons with Research) in Economics *(With effect from Academic Session 2022-23)*



**School of Social Sciences
Doon University
Dehradun-248012**

Department of Economics

About the Programme

The programme offers BSc (Hons)/BSc (Hons with Research) in Economics and a two-year MA degree in Economics. The emphasis is on research-based teaching and learning activities in an interactive environment with a focus on 'quality' and 'relevance'. The programme aims at imparting holistic knowledge by providing an exposure to critical understanding of contemporary socio-economic issues. The emphasis is on equipping students with analytical skills and their applications in different fields of economics with the help of quantitative methods and hands on practice on different statistical software, necessary for a proper understanding of the discipline. The programme enables students to understand proper policy responses to economic problems and trains them in data collection and analysis with the applications of statistical and econometric methods.

Students are encouraged to engage in a variety of extension activities both within and outside the University. The Department of Economics proactively encourages students' internships for honing their skills for real-world situations. It periodically organises brainstorming discussions and debates on contemporary social and economic issues through seminars, workshops and panel discussions with active participation of students and teachers. The programme of the Department trains students for a career in the corporate, academic, public policy or analytics sectors depending on their interest. The teaching and learning are encouraged in an interactive mode with extensive applications of econometric tools and techniques. For this, the Department has a dedicated computer lab to learn applied economics.

Programme Learning Outcomes

After completion of the programme, students are well equipped with:

- Broad understanding of various basic economic theories
- Knowledge of the mathematical and statistical techniques necessary for a proper understanding of the discipline
- First-hand knowledge of the real world economic issues and problems facing the country and the world
- Learn collection of information and applications of various statistical techniques and software for economic analysis
- Become an enlightened citizen for understanding economic issues

Course Structure

Semester System

The University follows a semester system. One academic year will have two semesters; the First Semester starts in July and the Second Semester in January. Each course is for the duration of one semester and it is assigned a specific number of credits in terms of contact hours. The number of credits to be assigned to a course is determined by the School. It is mandatory to complete a minimum number of credits for a particular programme.

Course Work

The Course Work, which includes Core courses, a range of Elective courses and Skill enhancing courses, is designed to give advanced knowledge in specialized areas relevant to the programmes. The emphasis will be on overall development of communication and research skills in students. To bring out the full potential of students, teaching is done through lectures, practical, field work, seminars, assignments, which are linked to a course having a number of credits with prescribed contact hours. Tutorials and group discussions will provide close interaction between student and teacher.

Types of Courses

The Department offers a wide range of courses, generally categorized under following broad types:

- *Discipline Specific Core Course (DSC)*: A core course is a compulsory course. A student of Economics (Hons) has to take eighteen such Economics courses over six semesters
- *Elective Courses*: 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 Elective Course (DSE)*: These are elective courses that provide advanced undergraduate training in specialised areas of Economics.
 - *Generic Elective Course (Other Department/Faculty) (GE)*: These courses, in disciplines other than Economics, are intended to broaden the training of a student in the Economics (Hons) programme.

- Ability Enhancement/Co-curricular Course (AECC)
- Skill Enhancement/Vocational Course (SEC)
- Internship/Project Work/Community Outreach (IP)
- Value Addition Course (VAC) : To be taken from a common pool of courses offered by different disciplines

A. Academic Framework for 4-Year UG Programme

Semester	Core (DSC) (4 credits)	Elective (DSE/GE)	SEC/Project/Dissertation	AEC/VA C	Total credits
1	(DSC1, DSC2, DSC3) 3x4=12	(GE1) 1x4=4	(SEC1) 1x2=2	(AEC1) (VAC1) 2x2=4	22
2	(DSC4, DSC5, DSC6) 3x4=12	(GE2) 1x4=4	(SEC2) 1x2=2	(AEC2) (VAC2) 2x2=4	22
<p>Exit option after One year for an Under Graduate Certificate in Foundations of Economics :</p> <ul style="list-style-type: none"> ✓ 44 Credits and one vocational course/internship/apprenticeship of 4 Credits. ✓ For taking exit of the programme the student is required to inform the Department/School before commencement of the second semester 					
3	(DSC7, DSC8, DSC9) 3x4=12	(DSE1/GE3) 1x4=4	(SEC3) 1x2=2	(AEC3) (VA C3) 2x2 =4	22
4	(DSC10, DSC11, DSC12) 3x4=12	(DSE2/GE4) 1x4=4	(SEC4) 1x2=2	(AEC4) (VA C5) 2x2 =4	22
<p>Exit option after Two year for an Under Graduate Diploma in Diploma in Applied Economics:</p> <ul style="list-style-type: none"> ✓ 88 Credits and one vocational course/internship/apprenticeship of 4 Credits. ✓ For taking exit of the programme the student is required to inform the Department/School before commencement of the fourth semester 					
5	(DSC13, DSC14, DSC15,) 3x4=12	(DSE3) (GE5) 2x4=8	Internship/ Apprenticeship Project/Community Outreach (1x2=2)		22
6	(DSC16, DSC17, DSC18,) 3x4=12	(DSE4) (GE6) 2x4=8	Internship/ Apprenticeship/ Project/Community Outreach (1x2=2)		22
<ul style="list-style-type: none"> ✓ Students who wish to exit after Three Years with 132 Credits will be awarded BSc Degree in Economics if he/she earned 80 Credits (from 18 DSCs and 2 DSEs) in that Discipline/Subject. ✓ Students who secure 75% marks/CGPA 7.5 and above in the first six semesters, and who wish to undertake research at the undergraduate level can opt for a UG Degree (Honours with Research) in Economics. They will also have an option to choose a UG (Honours) degree. ✓ Those having less than 7.50 CGPA can only do a UG Degree (Honours) In Economics in the 					

fourth year as indicated below at 7th and 8th Semester levels.

7	(DSC19)1x4=4	(DSE/GE) 3x4=12	<u>For a UG Degree (Honours)</u> Minor Academic Project (1x4= 4) and Seminar (1x2= 2) <u>For a UG Degree (Honours with Research)</u> Research Project/Dissertation (1x6=6)	22
8	(DSC20)1x4=4	(DSE/GE) 3x4=12	<u>For a UG Degree (Honours)</u> Minor Academic Project (1x4= 4) and Seminar (1x2= 2) <u>For a UG Degree (Honours with Research)</u> Research Project/Dissertation (1x6=6)	22

After completing Four year with the Honours/ Honours with Research undergraduate degree in Economics will be awarded with 176 credits.

**The students who are willing to take exit after 1st and 2nd year of their academic programme are required to apply for the apprenticeship/internship by 30th January of every academic year. For details, please refer to the latest Prospectus of Doon University.

B. Academic Framework for 1-Year Master Programme

[For those who have successfully completed 4-Year Honours/ Honours with Research in Economics Programme as per UGC norms]

Semester	Core (DSC) (4 credits)	DSE/GE	SEC/Project/Dissertation	AEC/VAC	Total credits
1	(DSC)2x4=8	(DSE) 3x4=12	Seminar/project (1x2=2)		22
OR					
i. Seminar (1x2=2)					
ii. Dissertation/Academic Project/Entrepreneurship (1x20=20) OR (2x10=20)					
2	(DSC)2x4=8	(DSE) 3x4=12	Seminar/project (1x2=2)		22
OR					
i. Seminar (1x2=2)					
ii. Dissertation/Academic Project/Entrepreneurship (1x20=20) OR (2x10=20)					

After successfully completing the 1-Year with 44 credits, the student will be awarded the Degree of M.Sc. in Economics.

C. Academic Framework for 2-Year (4 Semesters) Masters Programme

Semester	Core (DSC) (4 credits)	DSE/GE	SEC/Project/Dissertation	AEC/VAC	Total credits
1	(DSC) 3x4=12 or (DSC) 2x4=8	(DSE)2x4=8 or (DSE)3x4=12	Seminar/project (1x2=2)		22
2	(DSC) 3x4=12 or (DSC) 2x4=8	(DSE)2x4=8 or (DSE)3x4=12	Seminar/project (1x2=2)		22
Exit option after One year with 44 credits with a PG Diploma in Economics					
3	(DSC)2x4=8	(DSE) 3x4=12	Seminar/project (1x2=2)		
OR					
i. Seminar (1x2=2)					
ii. Dissertation/Academic Project/Entrepreneurship (1x20=20) OR (2x10=20)					
4	(DSC)2x4=8	(DSE) 3x4=12	Seminar/project (1x2=2)		22
OR					
i. Seminar (1x2=2)					
ii. Dissertation/Academic Project/Entrepreneurship (1x20=20) OR (2x10=20)					
After Two year with 88 credits the student will be awarded the Degree of M.A./M.Sc. in Economics.					

Semester-wise Details of Courses

Semester-1							
Sl. No.	Type of Discipline	Course Code	Course Title	Credit	L	T	P
1	DSC-1	ECC101	Foundations of Microeconomics-I	4	3	1	
2	DSC-2	ECC102	Foundations of Macroeconomics-I	4	3	1	
3	DSC-3	ECC103	Mathematics-I	4	3	1	
4	GE-1	ECG101	Foundations of Economics-I	4	3	1	
5	AECC-1		To be selected from the pool of courses offered by the University	2			
6	VAC-1		To be selected from the pool of courses offered by the University	2			
7	SEC-1	ECS101	Basics of Computer Applications	2			
					1		2

Total Credits in Semester I: 22

Semester-2							
Sl. No.	Type of Discipline	Course Code	Course Title	Credit	L	T	P
1	DSC-4	ECC151	Foundations of Microeconomics-II	4	3	1	
2	DSC-5	ECC152	Foundations of Macroeconomics-II	4	3	1	
3	DSC-6	ECC153	Mathematics-II	4	3	1	
4	GE-2	ECG151	Foundations of Economics-II	4	3	1	
5	AECC-2		To be selected from the pool of courses offered by the University	2			
6	VAC-2		To be selected from the pool of courses offered by the University	2	2		
7	SEC-2	ECS151	Applications of Basic Statistical Software (SPSS)	2	1		2
Total Credits in Semester II: 22			Cumulative Credits : 44				
			(Semester I +II)				
Exit Option with Undergraduate Certificate in Foundations of Economics							

Semester -3							
Sl. No.	Type of Discipline	Course Code	Course Title	Credit	L	T	P
1	DSC-7	ECC201	Development Economics-I	4	3	1	
2	DSC-8	ECC202	Statistics-I	4	3	1	
3	DSC-9	ECC203	Environmental Economics	4	3	1	
4	DSE-1/GE-3*			4	3	1	
5	AECC-3		To be selected from the pool of courses offered by the University	2	2		
6	VAC-3		To be selected from the pool of courses offered by the University	2	2		
7	SEC-3	ECS201	Economics Lab	2	1		2
Total Credits in Semester III: 22							

Semester-4							
Sl. No.	Type of Discipline	Course Code	Course Title	Credit	L	T	P
1	DSC-10	ECC251	Development Economics-II	4	3	1	
2	DSC-11	ECC252	Statistics-II	4	3	1	
3	DSC-12	ECC253	Public Economics	4	3	1	
4	DSE-2/GE-4*			4	3	1	
5	AECC		To be selected from the pool of courses offered by the University	2			
6	VAC-3		To be selected from the pool of courses offered by the University	2			
6	SEC-4	ECS251	Applications of Basic Statistical Software (STATA)	2	1		2
Total Credits in Semester IV: 22				Cumulative Credits : 88			
				<i>(Semester I to IV)</i>			
Exit Option with Undergraduate Diploma in Applied Economics							

Semester-V							
Sl. No.	Type of Discipline	Course Code	Course Title	Credit	L	T	P
1	DSC-13	ECC301	Econometrics-I	4	3	1	
2	DSC-14	ECC302	Indian Economy-I	4	3	1	
3	DSC-15	ECC303	International Economics	4	3	1	
4	DSE-3*			4	3	1	
5	GE-5*			4	3	1	
6	IPC	ECP301	Internship	2			4
Total Credits in Semester V: 22							

Semester-VI

Sl. No.	Type of Discipline	Course Code	Course Title	Credit	L	T	P
1	DSC-16	ECC351	Econometrics-II	4	4	3	
2	DSC-17	ECC352	Indian Economy-II	4	4	3	
3	DSC-18	ECC353	Mathematical Economics	4	4	3	
4	DSE-4*			4	4	3	
5	GE-6*			4	4	3	
6	IP	ECP351	Field Survey	2			4
<i>Total Credits in Semester VI:22</i>			Cumulative Credits: 132				
			(Semester I to VI)				
<i>BSc in Economics</i>							
<i>(If she/he earns 80 credits (consisting of 18 DSCs and 2 DSEs) in Economics discipline)</i>							

Semester-VII

Sl. No.	Type of Discipline	Course Code	Course Title	Credit	L	T	P
1	DSC 1	ECC 401	Advanced Microeconomics	4	3	1	
2	DSE 1	ECE 401	Public Policy- Theory and Practice	4	3	1	
3	DSE 2	ECE 402	Mathematics for Economists	4	3	1	
4	DSE 3	ECE 403	Research Methodology	4	3	1	
5	DSE 4	ECE 404	Indian Economy	4	3	1	
6	DSE 5	ECE 405	Tourism and Sustainable Development	4	3	1	
7	SEC	ECP 401	UG Dissertation Part-I	6			
8	SESC	ECP 402	Minor Academic Project	4			
9	SEC	ECS 401	Academic Project: Seminar	2			
	Total Credits in Semester VII: 22						

Semester-VIII

Sl. No.	Type of Discipline	Course Code	Course Title	Credit	L	T	P
1	DSC 3	ECC 451	Advanced Macroeconomics	4	3	1	
2	DSE 6	ECE 451	Regional Economy of Himalayan States	4	3	1	
3	DSE 7	ECE 452	Behavioural Economics	4	3	1	
4	DSE 8	ECE 453	Economics of Education and Health	4	3	1	
5	DSE 9	ECE 454	International Trade and International Finance	4	3	1	
6	DSE 10	ECE 455	Game Theory	4	3	1	
7	DSE 11	ECE 459	Advanced Econometrics	4	3	1	
8	SEC	ECP 451	UG Dissertation Part-II	6			
9	SEC	ECP452	Minor Academic Project -II	4			
10	SEC	ECS 451	Seminar	2			
	Total Credits in Semester VIII: 22						

Semester-wise List of Discipline-specific Electives

Semester -III (Choose one elective course)	Semester -IV (Choose one elective course)
1. ECE201 History of Economic Thought 2. ECE202 Banking and Monetary Economics	1. ECE251 Gender Economics 2. ECE252 Health Economics
Semester -V (Choose one elective course)	Semester -VI (Choose one elective course)
1. ECE301 Agricultural Economics 2. ECE302 Financial Economics	1. ECE351 Basics of Economic Psychology 2. ECE352 Labour Economics
Semester-VII (Choose one/two/three elective courses)	Semester-VIII (Choose one/two/ three elective courses)
1. ECE401 Public Policy- Theory and Practices 2. ECE402 Advanced Econometrics 3. ECE403 Advanced Statistics for Economics 4. ECE404 Research Methodology 5. ECE405 Energy Economics	1. ECE451 Regional Economy of Himalayan States 2. ECE452 Behavioural Economics 3. ECE453 Financial Theory and Markets 4. ECE454 International Trade & Finance 5. ECE455 Game Theory

Semester-wise List of Generic Electives

Semester -I	Semester -II
1. ECG101 Foundations of Economics-I	1. ECG151 Foundations of Economics-II
Semester -III (Choose one course)	Semester -IV (Choose one)
1. ECG201 History of Indian Economic Thought 2. ECG202 Regional Development in Uttarakhand	1. ECG251 Issues in Environmental Economics 2. ECG252 Economics of Industrial Organization and Strategy
Semester -V (Choose one course)	Semester -VI (Choose one course)
1. ECG301 Globalisation and Development 2. ECG302 Contemporary Economic Issues in India	1. ECG351 Human Development 2. ECG352 Poverty and Inequality
Semester -VII (Choose one/two courses)	Semester -VIII (Choose one/two courses)
1. ECG401 Tourism and Sustainable Development 2. ECG402 Law and Economics 3. ECG403 Public Policy- Theory and Practices	1. ECG451 Economics of Inclusion 2. ECG452 Informal Sector and Economic Development 3. ECG453 Demography

Credit Structure

The University follows a Credit System of Study, which allows a continuous evaluation of a student's performance and the flexibility to allow a student to select a number of Courses of his/her choice at a pace suited to his/her ability, subject to fulfilment of the minimum requirements for continuation in the Programme. Each Course in the Programme is designated by the Course Number having certain number of Credits, which describe its weightage and contact hours. *Usually, for 15 hours of contact there is 1 Credit point.*

Class Attendance

The minimum class attendance required for appearing in the Semester examination shall be 75% of the total classes held in the course. The Vice Chancellor may condone the shortage of attendance to the extent of 5% on the recommendation of advisor and the Dean concerned under conditions prescribed by the Academic Council for the purpose. Student failing short of attendance in a Course shall fail in the course irrespective of the marks obtained at the end of the Semester.

Teaching Learning Process

- Lectures and tutorials
- Lectures and practical in case of practical papers

Conduct of Semester Examination

The students shall be continuously evaluated in the Courses through the following examinations:

- MID-TERM EXAMINATION** with the weightage of **30 Marks (Theory)**.
- FINAL SEMESTER EXAMINATION** with a weightage of **50 Marks (Theory)** for courses without practical component. In courses with practical, the weightage shall be **30 Marks (Theory) + 20 Marks (Practical)**. **20 Marks will be distributed between 15 Marks laboratory work and 5 Marks viva.**
- Internal Assessment of 20 Marks** will be distributed by the course teachers based on class performances, class assignments, class tests, quizzes and seminars.
- For the evaluation of **Dissertation work**, in case of Post-graduate students, there shall be no written Examination.

Semester-wise Detailed Syllabus of Core Courses

First Semester

ECC101: Foundations of Microeconomics-I

Course Objective

The course is designed to provide a sound training in microeconomic theory. Mathematical tools are used to facilitate understanding of the basic concepts. This course looks at the behaviour of the consumer and the producer and covers the behaviour of a competitive firm.

Course Learning Outcomes

- Sound learning of select basic principles of microeconomics, interactions of supply and demand, and characteristics of perfect and imperfect markets including factor markets
- Equipped with mathematical tools to understand the basic concepts in economics.
- Understand the behaviour of the consumer and the producer and the behavior of a competitive firm.

Unit-I : Introduction: Scarcity and Choice; difference between microeconomics and macroeconomics, concept of firm and industry Economic models, The Basic Market Model

Unit-II : Demand and Supply: Demand and Supply analysis, Elasticity, classification of commodities: Normal, Inferior and Giffen goods, Consumer Surplus & producer Surplus Indifference curves Price- effect: substitution and income-effects and Revealed Preference Theory

Unit-III : Firm and Production Sector: Production and Cost function, Laws of production, Isoquants and diminishing rate of factor substitution, Elasticity of Substitution, Different concepts of Cost and Revenue, Economies and Diseconomies of Scale

Unit-IV: Market Structure and Factor Market: Perfect market structure and imperfect market structure, characteristics, conditions of equilibrium Factor pricing, Marginal productivity theory, Product Exhaustion Problem

Recommended books:

Text Books:

1. Koutsoyiannis. A, *Modern Micro Economics*, ELBS/ Macmillan
2. John P. Gould, Edward P. Lazear, *Microeconomic Theory*, AITBS Educational Books
3. Intermediate microeconomics, A Modern Approach, Hal R. Varian

Reference Books

1. Handerson and Quandt, *Microeconomic Theory- A Mathematical Approach*, Tata Mc Graw-Hill
2. G S Maddala and Ellen Miller, *Micro Economic Theory and Application*, TataMc Graw- Hill
3. Mankiw, N. -- *Economics: Principles and applications*, 4th ed. Cengage Learning

Course Objective

The main aim of this course is to cover the main paradigms involved in the determination of real income, employment and unemployment, the price level and inflation in an open mixed economy, and the conduct of macroeconomic policy. Open economy will be dealt in Macroeconomics-II Course

Course Learning Outcomes

- Enables students to understand and comment upon real economic issues like national income accounting, inflation, money supply, unemployment, GDP, determination of factor prices and their interlinkages
- Start critical thinking of various theoretical strands of macro-economic issues

Unit- I : Introduction: What Macroeconomists Study, use of models in Macroeconomics, Prices: Flexible Versus Sticky, Microeconomic Thinking and Macroeconomic Models, Measuring the Value of Economic Activity: National Income Accounting, GDP and its nuances, CPI and other price deflators, working with macroeconomic data, The Open Economy

Unit-II : Classical Theory: The Economy in the Long Run, National Income: Where It Comes From and Where It Goes, The Factors of Production, The Production Function, The Supply of Goods and Services, How Is National Income Distributed to the Factors of Production?, Factor Prices, What Brings the Supply and Demand for Goods and Services Into Equilibrium?, Equilibrium in the Market for Goods and Services: The Supply and Demand for the Economy's Output, Equilibrium in the Financial Markets: The Supply and Demand for Loanable Funds, Changes in Saving: The Effects of Fiscal Policy

Unit-III : Money and Inflation: The Types of Money, Quantity Theory of Money, Money Demand Function and the Quantity Equation, Money, Prices and Inflation; Interest Rates: Real and Nominal, The Fisher Effect, Cost of inflation, Hyperinflation

Unit- IV : Unemployment: Job Loss, Job Finding, and the Natural Rate of Unemployment, Public Policy and Frictional Unemployment

Recommended books:

Text Books:

1. Mankiw, N.G. *Macroeconomics*. (Worth), 9th ed

Reference Books:

1. Blanchard, O. *Macroeconomics*. (Prentice Hall)
2. Dornbusch, R., S. Fischer and R. Startz, *Macroeconomics*. (McGraw-Hill)
3. Jones, C. . *Macroeconomics*, 4th ed. W. W. Norton

Course Objective

This course is the first part of a two-course series. The objective of this course is to create a strong foundation of basic mathematical tools and techniques that are essential to understand economic theory at the undergraduate level specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this syllabus.

Course Learning Outcome

- Together these two papers enable students to learn mathematical foundations necessary for essential to understand economic theory, econometrics, statistics and data analytics.
- Student become more logical in making or refuting arguments

Unit-I : Number System and Set Theory: Real numbers, Integers, Rational & Irrational Numbers, Sets and their Representation, Types of Sets, Subset, Venn diagram, Cartesian Product, Application of Sets, Mathematical logic

Unit-II : Functions & Relations: Meaning, Types of functions, Range and Domain, Explicit, Implicit, Inverse functions, Different types of graphs. Limit, Concept of slope, Graphs, Concept of Simultaneous equations

Unit-III : Differentiation:

Definition, Derivative of a function, Rules of Differentiation, Differentiation with single variable, Second and Higher order derivatives, Properties

Unit IV: Partial and Total Differentiation: Concept, partial derivative, rules of partial differentiation, second order partial derivative, Differentials and total differentials, total derivative, Implicit function rule

Unit-V : Integration: Meaning, Basic rules, Indefinite and Definite integrals, Geometric representation

Unit-VI : Matrix Algebra: Types, Matrix operations Addition, Subtraction and Multiplication. Rank of Matrix. Determinants: Matrix inversion, Cramer's Rule. Vector Spaces: algebraic and geometric properties, scalar products, norms, orthogonality; linear transformations

Recommended books:

1. Chiang, Alpha C. (1984). Fundamental Method of Mathematical Economics, Third Edition, McGraw Hill
2. Rosser, Mike. (2003). Basic Mathematics for Economists, Second Edition, Routledge, Taylor & Francis Group
3. Handerson, Quandt. (1980). Microeconomic Theory, A Mathematical Approach, Third Edition, McGraw Hill

ECS101: Basics of Computer Applications

Course Objective

The course is designed to teach students the theoretical and practical approach of information technology with the application of economic theories. It is a two sequential course to be taught in the first and second semester(s) of Undergraduate Programme in Economics.

Course Learning Outcomes

- Students get trained in applications of MS Office software such as MS word, Excel and Power Points.
- They learn to prepare texts, charts and presentations.

Unit I: Introduction to Computers and Peripherals Basic components of computer: CPU, Input-Output devices, Keyboard, Mouse and Scanner, Video Display, Printers and Plotters, data storage and retrieval, hard disk, floppy disk and CDROM. Type of computers and their applications; Computer networking and resource sharing, hardware, software and firmware.

Unit-2: MSWord: Word processing concepts, Use of Templates, Working with word document: Editing text, Find and replace text, Formatting, spell check, Autocorrect, Autotext; Bullets and numbering, Tabs, Paragraph Formatting, Indent, Page Formatting, Header and footer, Tables: Inserting, filling and formatting a table; Inserting Pictures and Video; Mail Merge: including linking with Database; Printing documents Creating Business Documents using the above facilities, Basics of presentations: Slides, Fonts, Drawing, Editing; Inserting: Tables, Images, texts, Symbols, Media; Design; Transition; Animation; and Slideshow. Creating Business Presentations using above facilities, Spreadsheet concepts, Managing worksheets; Formatting, Entering data, Editing, and Printing a worksheet; Handling operators in formula, Project involving multiple spreadsheets, Organizing Charts and graphs generally used Spreadsheet functions: Mathematical, Statistical, Financial, Logical, Date and Time, Lookup and reference

Reference Books:

1. Sinha, P.K. , Computer Fundamental, BPB Publications, New Delhi.
2. Rajaraman, V. Fundamentals of Computers, Prentice Hall of India, New Delhi.
3. Parameswaranm R. Computer Applications in Business, S. Chand and Company, New Delhi.

Second Semester

ECC151: Foundations of Microeconomics-II

Course Objective

This course is a sequel to Foundation of Microeconomics I. 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 firm behavior.

Course Learning Outcomes

- Conceptual clarity is developed about basic elements of consumer theory, functioning of perfectly competitive market and learn the use of mathematical tools and reasoning for economic analyses.

Unit I: Consumer Theory: Recent Developments, Violation of the premises of Indifference Curve Approach: Satiation and Lexico-graphic ordering, Uncertainty and Risks

Unit II: Market Structure: Perfect Competition, Monopoly and its regulation, Price discrimination, Monopolistic Competition, Oligopoly Theories and Models

Unit III: Game Theory: Game theory: Payoff Matrix, Nash Equilibrium, Mixed Strategies, Mixed Strategies, Games of Coordination, Maximin and Minimax Strategies, Prisoners Dilemma and Oligopoly Theory, Instability of a Cartel, Tit-for-Tat Strategy

Unit IV: Managerial Theories of Firm: Firm and firm's objective- profit maximization, Sales maximization, Maris and Williamson's Model, Satisficing Model

Unit V: General Equilibrium and Economic Efficiency: Partial Equilibrium versus General Equilibrium Approach, Walrasian General Equilibrium System, Edgeworth box, Pareto Optimality, Social Welfare function, Welfare maximization,

Unit VI: Market Failure: Externalities and public goods, Provision of the Public Good, Asymmetric: Market for Lemons, Moral Hazards and Adverse selection

Recommended books:

Text Books:

1. Koutsoyiannis. A, *Modern Micro Economics*, ELBS/ Macmillan
2. John P. Gould, Edward P. Lazear, *Microeconomic Theory*, AITBS Educational Books
3. Hal R. Varian, *Intermediate Microeconomics, A Modern Approach*,

Reference Books:

1. Varian, H. (2000). *Microeconomic Analysis*, W.W. Norton, New York.
2. Handerson and Quandt, *Microeconomic Theory- A Mathematical Approach*, Tata Mc Graw-Hill
3. G S Maddala and Ellen Miller, *Micro Economic Theory and Application*, TataMc Graw- Hill

ECC152: Foundations of Macroeconomics-II

Course Objective

This course is a sequel to Macroeconomics I. In this course, the students are introduced to the long run dynamic issues like growth, demand and supply models and technical progress. It also provides the micro foundations to the various aggregative concepts used in the previous course.

Course Learning Outcomes

- Enables students to analyse the macroeconomic performance with the understanding of theories of growth and equilibrium.
- Allows them to evaluate important macroeconomic policies and their implications

Unit-I Growth Theory: The Economy in the Very Long Run; Capital Accumulation and Population Growth; Golden Rule Level of Capital; Steady State with Population Growth

Unit-II Economic Growth II: Technology, Empirics, and Policy, Technological Progress in the Solow Model; Balanced Growth; Convergence; Beyond the Solow Model: Endogenous Growth Theory; Solow Residual in the Short Run; The Economy in the Short Run with Economic Fluctuations

Unit-III The Model of Aggregate Supply and Aggregate Demand: IS curve, The Keynesian Cross, The Money Market and the LM Curve, the Theory of Liquidity Preference; Aggregate Demand II: Applying the IS–LM Model; The IS–LM Model in the Short Run and Long Run

Unit-IV The Open Economy Revisited: The Mundell–Fleming Model and the Exchange-Rate Regime; The Mundell–Fleming Model; the Phillips Curve, Expected Inflation: Adaptive Expectations; The Taylor Rule; Macroeconomic Policy Debates

Recommended books:

Text Books

1. Mankiw, N.G. *Macroeconomics*. (Worth), 9th ed

Reference Books:

2. Blanchard, O. *Macroeconomics*. (Pearson Education)
3. Dornbusch, R., S. Fischer and R. Startz, *Macroeconomics*. (McGraw-Hill)

Course Objective

This course is the second part of a compulsory two-course series. This part covers the mathematical tools of optimization, dynamics and financial mathematics that enables the understanding of advanced level economic theories.

Course Learning Outcomes

- The learning of various analytical tools helps students in the advanced study of different disciplines of Economics and applications of these tools for economic forecasting and decision making.

Unit-I: Unconstrained Optimization and Constrained Optimization: Concept of Maxima and Minima, local and global optima, unconstrained optimization with single variable, unconstrained optimization with multiple variables, First order and second order condition for maxima and minima, Concept of Convexity and concavity, Quasi convexity and quasi concavity, Equality constraint, Constrained optimization with more than one variable, Constrained optimization with one constraint, Lagrange Multiplier Method, First order and second order condition, Envelope Theorem

Unit -II : Linear Programming: General formation of linear programming, graphical method, Simplex method: finding the extreme points, optimal extreme points, duality problem

Unit-III: Mathematical Modelling: Concept of a model, types of models, steps for constructing mathematical models, process, application with examples from economic theory

Unit-IV: Differential equations: First-Order differential equations with constant term and constant coefficient definition and solution

Unit-V: Difference Equation: First-order difference equations with constant term and constant coefficient definition and solution

Unit- VI : Financial Mathematics: Introduction, Simple interest and compound interest, interest rate, investment, time period, net present value, internal rate of return

Recommended books:

1. *Chiang, Alpha C. (1984). Fundamental Method of Mathematical Economics, Third Edition, McGraw Hill*
2. *Rosser, Mike. (2003). Basic Mathematics for Economists, Second Edition, Routledge, Taylor & Francis Group*
3. *Handerson, Quandt. (1980). Microeconomic Theory, A Mathematical Approach, Third Edition, McGraw Hill*

ECS151: Applications of Basic Statistical Software (SPSS)

Course Objective

The course is designed to teach the students theoretical and practical knowledge of software packages used in the field of Economics in order to do analysis of the data.

Course Learning Outcomes

- Students are able to use SPSS software for data mining and various types of research (like market research, academic research, etc).

Unit I : Stata basics: Documentation, command syntax, do files, log files, globals, locals, loops and Variable view, Data types, Creating variables in SPSS, export/ Import/ splitting of Data.

Unit II : Data management: types of data, inputting data, data management (viewing data, missing values, transforming data, saving data), manipulating datasets (ordering, merging, appending)

Unit III: Graphics: various graph commands, box and whisker plot, histogram, kernel density plot, two way scatter

Unit IV: Linear regression basics: data description, variable description, summary statistics, OLS regression, specification analysis, prediction, margins.

Recommended books

1. Cameron, A. C. and P. K. Trivedi (2009). Microeconometrics using Stata. Stata press College Station, TX
2. William E. Wagner : Using IBM SPSS Statistics for Social Statistics and Research Methods, Sage Publication
3. Gaur,S.S & Gaur, A.S. : A guide to Data Analysis using SPSS, Sage Publication
4. G.Norris, F. Qureshi, D.Howitt, D. Cramer : Introduction to Statistics with SPSS for Social Science, Taylor & Francis Ltd

ECC201: Development Economics-I

Course Objective

This is the first part of a two-part course on economic development. The course begins with a discussion of alternative conceptions of development and their justification. It then proceeds to aggregate models of growth and cross-national comparisons of the growth experience that can help evaluate these models.

Course Learning Outcomes

- Enables students to learn the basics of development economics, and inculcates their in depth understanding of the concepts of development, growth, poverty, inequality, as well as the underlying political institutions.

UNIT I: Development and Underdevelopment: Poverty and Inequality, Absolute and Relative Poverty, Measurement of Poverty, Functional Impact of Poverty, Inequalities of Income, Measurement of Inequalities of Income, Growth and Inequalities; Development Gap, Growth and Development – Modern View, Concept of Economic Development and Structural Change, Indicators of Economic Welfare. Principles in the measurement of income inequalities and Application of Lorentz curve in comparing income inequalities between nations. Effect of poverty and income inequalities on the growth and development (effect on GDP)

UNIT II: Theories of Underdevelopment: Vicious Circles of Poverty, Methods to Break the Vicious Circle, The Big Push Theory, Theory of Critical Minimum Effort, The Low Level Equilibrium Trap Theory, Theory of Social Dualism, Theory of Technological Dualism, Lewis's Model, Ranis and Fei Model, Harris-Todaro Model

UNIT III: Allocation of Resources and Growth Strategies in Developing Countries: Growth Strategy – The strategy of Balanced Growth, The strategy of Unbalanced Growth, Investment Criteria in Developing Countries, Application of Investment Criteria, Choice of Techniques, Private and Social Costs and Benefits, The Concept of Shadow Price, Discounting the Future, Distributional Concerns, Government Regulations, Nature and Scope of Planning - Planning in a Capitalist Economy, Planning in a Socialist Economy, Planning in a Mixed Economy; Democratic, Decentralized and Indicative Planning; Micro level Planning, Plan Models, Totalitarian planning, Planning by inducements

UNIT IV: Political Institutions and the Functioning of the State: The determinants of democracy; alternative institutional trajectories and their relationship with economic performance; within-country differences in the functioning of state institutions; state ownership and regulation; government failures and corruption

Text Books

Debraj Ray-*Development Economics*, Oxford University Press, Delhi, 1998

Reference Books:

Bardhan, P. (2010). *Awakening giants, feet of clay: Assessing the economic rise of China and India*. Oxford University Press

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.

Piketty, T., Saez, E. (2014). Inequality in the long run, *Science*, 344

Rodrik, D. (2009). One economics, many recipes: Globalization, institutions and economic growth. Ch. 1: "Fifty Years of Growth (and lack thereof): An Interpretation". Princeton University Press

Sen, A. *Development as Freedom*. Oxford University Press, 2000.

Course Objective

The course is spread over two-parts. The purpose of this course is to acquaint students with the statistical use in the field of Economics. The field of economics depends greatly on the likelihood that something is going to happen.

Course Learning Outcomes

- Elementary knowledge is gained about the measures of central tendency, measures of dispersion and measures of association between variables.
- Develops capacity to analyse statistics in everyday life to distinguish systematic differences among populations from those that result from random sampling

Unit-I : Introduction to Statistics: Meaning, Characteristics, Importance, Limitations of Statistics Collection of Data, Classification & Tabulation of Data, Diagrammatic & Graphic Presentation of Data.

Unit-II : Measures of Central Tendency: Types of Averages: Arithmetic Mean, Weighted Arithmetic Mean, Median, Quartiles, Deciles, Percentiles, Mode, Interrelation between Mean, Median & Mode, Geometric Mean & Harmonic Mean

Unit-III : Measures of Dispersion: Range, Quartiles, Inter quartile Range, Mean Deviation, Standard Deviation, Coefficient of Variation & Lorenz Curve Moments, Skewness & Kurtosis

Unit-IV: Measure of Association between Variables: Correlation Analysis-Meaning & types of Correlation, Methods of Correlation- Scatter Diagram, Karl Pearson & Rank Correlation. Regression Analysis: Uses of Regression Analysis, Difference between Regression & Correlation Analysis. Regression Equations- X on Y & Y on X, Coefficients of Regression. Difference between Association & Correlation Notation & Terminologies, Consistency of Data, Methods of Association

Recommended books:

Text Books:

1. Gupta, S.P. (2014) Statistical Methods, *Sultan Chand Publishers*, forty fourth ed.
2. Gupta, S.C. & Kapoor V.K. (2011) Fundamentals of Applied statistics, *Sultan Chand Publishers*, fourth ed.

Reference Books:

1. Fundamentals of Mathematical statistics By S.C.Gupta & V.K Kapoor, *Sultan Chand Publishers*.
2. An Introduction to Mathematical Statistics and its applications- Larsen Richard J, *PrenticeHall*, 2012
3. Business Statistics by S.P.Gupta & M.P Gupta, by *Sultan Chand Publishers*.

Course Objective

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

Course Learning Outcomes

- With the knowledge of economic concepts of environmental issues, students get equipped in analyzing causes, consequences and economic costs of environmental problems
- They also get familiar with a comparative analysis of various countries in addressing the environmental concerns

Unit-I : Introduction: Fundamental concepts in Environmental Economics, The model of supply and demand, Economic criteria for efficiency, Welfare measures Circular flow model and Material Balance Model, Review of microeconomics and welfare economics, Environmental Performance Index

Unit-II: Market Failure: Environmental problems- A Market failure, public good, externalities, relationship between public goods and externalities, property rights and the Coase Theorem, Pareto optimality and market failure in the presence of externality, Market instrument used in India

Unit-III: Environmental Problems and Environmental Policy: Economics of climate change, trade and environment, the market approach- types of market instruments, pollution charges, pigovian taxes, Measuring the benefit of environmental improvement (non – market values and measurement methods, risk assessment and perception

Unit-IV: Environment and Sustainable Development: Sustainable development- a Global objective, SDGs in Indian scenario, Environmental Kuznets Curve, International trade and environmental protection, Sustainable development measurement

Recommended Books:

Text Books:

1. Thomas and Callan, (2009). *Environmental Economics*, Cengage Learning, India Edition
2. Kolstad, C.D. (1999). *Environmental Economics*, Oxford University Press, New Delhi

Reference Books and Reports

1. Hanley N., J.F. Shogren and B. White (1997). *Environmental Economics in Theory and Practice*, Macmillan.
2. Shankar, U. (Ed.) (2001). *Environmental Economics*, Oxford University Press, New Delhi.
3. World Bank (1993). *The World Development Report, 1993: Investing in Health*, O.U.P., New York

Course Objective

Like all sciences, economics has its vast laboratory too – on the streets, in offices and businesses, at home, in newspapers, and in the individual and collective imagination. After studying the core micro and macroeconomics courses, this course aims to enable students to learn economics with the practical applications of various theories and principles of the subject in this laboratory of the social sciences.

Course Learning Outcomes

- Students are able to apply the understanding of various theoretical constructs in Economics outside textbooks and in this laboratory of the social sciences.
- This enriches their analysis of various economic phenomenon and helps in taking right decisions in real world situation.

Unit: 1: Simulation Games: The functioning of some concepts in economics are particularly amenable to being replicated and observed in the classroom. Concepts encountered and understood through the following games tend to ingrain themselves in the brain stronger. - Widgets production: (<http://w3.marietta.edu/~delemeeg/expnom/s93.html#neral1>): The law of diminishing marginal productivity is not as intuitive as the law of diminishing marginal utility, yet can be illustrated by asking students to produce of widgets. - Prisoners' Dilemma: This classic game can illustrate trust and cooperation issues, the difference between single period and repeated games, and the occurrence of sub-optimal results when cooperation would obviously yield better results. There are vast amounts of research using game theory to explain sub-optimal results – in the context of civic consciousness, environment, commons, among others. - Ultimatum game: to illustrate limits of rationality through notions of fairness - Deal or No Deal: A classroom version of the game that has been played on television in several countries can illustrate differing preferences regarding risk, and differing abilities to make calculations of expected utility between players. This is meant to illustrate the ability of the human brain to make calculations and valuations that are not obvious, and also the limits of rationality.

Unit: 2: Nobel – 15 students will present a brief of the works of 15 Nobel Laureates. These presentations will be one component of internal assessment.

3. Weekly news analysis – the remaining students will present items of news from the previous week, and an analysis of the event using core micro or macroeconomic theoretical concepts. Students must be able to make connections between political discussions and their economic impacts. This will be one component of internal assessment.

4. Each student will choose two projects which should involve gathering primary and/or secondary data (qualitative and/or quantitative), employing concepts studied in any economics core subject to study a certain phenomenon. Students may wish to evaluate certain theories for their validity in various circumstances from their own data. Once-in two-weeks discussions of these projects will be conducted with each student. These projects may get students to start thinking about their dissertation.

ECC251: Development Economics-II

Course Objective

This is the second part of a two-part course on economic development. The course begins with a discussion of growth, inequality and poverty with the mixture of theoretical understanding and empirical analysis. It imparts knowledge about the role of institutions in economic development. The course also focuses on sectoral pattern of development in sectors such as agriculture, education and health.

Course Learning Outcomes

- This course inculcates the understanding about applied dimensions of economics and economic problems such as poverty and inequality
- The study of importance of institutions in economic decision making and determining development outcomes equip students to critically evaluate the role of such institutions

Unit 1: Demography and Development: Demographic concepts; birth and death rates, age structure, fertility and mortality; demographic transitions during the process of development; gender bias in preferences and outcomes and evidence on unequal treatment within households; connections between income, mortality, fertility choices and human capital accumulation; migration

Unit 2: Land, Labour and Credit Markets: The distribution of land ownership; land reform and its effects on productivity; contractual relationships between tenants and landlords; land acquisition; nutrition and labor productivity; informational problems and credit contracts; microfinance; inter- linkages between rural factor markets

Unit 3: Poverty and Inequality: Definitions, Measures and Mechanisms Inequality axioms; comparison of commonly used inequality measures; connections between inequality and development; poverty measurement; characteristics of the poor; mechanisms that generate poverty traps, and path dependence of growth processes

Unit 4: Education and Health: Role of health and education in human development; demand for health, Grossman's model of demand for health; public healthcare; rate of return to education: private and social; quality of education; inequalities in access to health and education

Suggested Books

1. Debraj Ray-Development Economics, Oxford University Press, Delhi, 1998
2. Alain de Janvry and Elisabeth Sadoulet (JS)-Development Economics: Theory and Practice, Routledge, London, 2016
3. Charles I. Jones, Introduction to Economic Growth, Second Edition, 2001
4. Basu, Kaushik- Analytical Development Economics, MIT Press, 1997
5. Pranab Bardhan and C.Udry -Development Micro Economics, Oxford University Press, 1999
6. Bhattacharya, J., Hyde, T., Tu, P. (2014). Health economics, Palgrave Macmillan.
7. World Health Organisation (2013). The economics of the social determinants of health and health inequalities: A resource book. World Health Organisation

Course Objective

This course is the second part of a compulsory two-course sequence during Semester III and IV. The purpose of this course is to acquaint students with the statistical use in the field of Economics. The field of economics depends greatly on the likelihood that something is going to happen

Course Learning Outcomes

- Student gains the elementary knowledge of probability, sampling, time series analysis and construction of index numbers.
- Trained in the usage of statistics in everyday life to distinguish systematic differences among populations from those that result from random sampling.
- Helps students in their research work in subsequent semesters

Unit-I: Elementary Probability Theory & its Distribution: Meaning, Basic Terminologies, Approaches of Probability, Probability Rules & Laws, Baye's Theorem, Probability Distribution- Normal, Binomial& Poisson Distribution.

Unit II: Sampling, Sampling Distribution & Statistical Inference: Principal Steps in a sample survey, Methods of Sampling, Properties of random samples. Standard Error & Sampling Distribution. Defining Hypothesis: Type I & Type II Errors, Power of Hypothesis Test. Estimation of population parameters; properties of estimators, confidence intervals for population parameters. Tests of Significance for Small Samples & Large Samples (Student's T test, Z test, F Test, Chi- Square, ANOVA-One way & Two Way classification.)

Unit-III: Time Series Analysis: Components, Measurement of Trends by Moving Average and the Least Square Method, Shifting the Trend Origin, Conversion of Trend Values.

Unit-IV: Index Numbers: Meaning, Methods of Index number calculation: Laspeyres' Paasches' Dorbish&Bowley, Fisher's , Marshall Edge worth, Kelly Methods, Chain Index Number, Base Shifting, Consumer Price Index & Wholesale Price Index. Test for Perfection-Factor Reversal test, Time reversal test, and Circular test.

Recommended books:**Text Books:**

1. Gupta, S.P. (2014) Statistical Methods, *Sultan Chand Publishers*, forty fourth ed.
2. Gupta, S.C. & Kapoor V.K. (2011) Fundamentals of Applied statistics, *Sultan ChandPublishers*, fourth ed.

Reference Books:

1. Fundamentals of Mathematical statistics By S.C.Gupta& V.K Kapoor, *Sultan ChandPublishers*.
2. An Introduction to Mathematical Statistics and its applications- Larsen Richard J, *PrenticeHall*, 2012
3. Business Statistics by S.P. Gupta & M.P Gupta, by *Sultan Chand Publishers*.

Course Objective

Public Economics is the study of government policy from the points of view of economic efficiency and equity. The course is designed to equip students in broad arenas of public finance and some other selected topics in public sector economics. An emphasis of the course is also on impact analysis of impact of public policies on resource allocation and distribution in the economy

Course Learning Outcomes

- At the end of the course, the students should be able to demonstrate their understanding of the public economics.
- Student gets equipped to deal with simple algebra problems that will help them to better understand these concepts, use diagrammatic analysis to demonstrate and compare the economic welfare effects of various environmental policy options
- Improves understanding about the usefulness and problems related to taxation and government expenditure
- Enhances critical understanding of public policies

Unit-I: The Economic Basis of Government Activity and Public Economics: Market Failure, information and the role of the Government, Fundamental Theorems of Welfare Economics, Pareto Optimality

Unit-II: Markets: Exchange Economy, Edge worth Box, Competitive Equilibrium, Utility Functions, Marginal Rate of Substitution, Pareto Optimal Allocations and Competitive Equilibrium. Production Economy: Pareto Optimality, Competitive Equilibrium with examples, Production Efficiency

Unit-III: Surplus & Externalities: Consumer and Producer Surplus, Welfare Cost of Intervention, Market Interactions, Externalities and Negotiation, Negotiated Compensation, Negotiation limits, Government Intervention

Unit-IV: Permit Trading, Common Property Resources & Co-ordination Failures: Environmental Pollution and Abatement, Direct Emissions Controls; Renewable Common Property Resources, Static and Dynamic Common Property Problem, Extinction; Co-ordination Game, Co- ordination Game with Uncertainty

Recommended Books:

Text Books:

1. John Leach , (2004) A Course in Public Economics , Cambridge University Press

Reference Books

1. Bowers, P.F. (1974): Private Choice and Public Welfare, Dryden Press, NY.
2. Buiter, W.H. (1990): Principles of Budget and Fiscal Policy, MIT Press.
3. Musgrave, Richard A. (1959): The Theory of Public Finance, Tata McGraw Hill, N.Y.
4. Mishra, B. (2006): Economics of Taxation: Theory and Application, AkanshaPublishing House, ND.
5. Prest, A.R. (1975): Public Finance in Theory and Practice, Weidenfeld and Nicholson, London.

ECS: 251 Application of Basic Statistical Software (STATA)

Course Learning Outcome:

- Students are able to use this software for data mining and various types of research (like market research, academic research, etc).

Unit-I Stata basics: Documentation, command syntax, do files, log files, globals, locals, loops.

Unit-II Data management: types of data, inputting data, data management (viewing data, missing values, transforming data, saving data), manipulating datasets (ordering, merging, appending).

Unit-III Graphics: various graph commands, box and whisker plot, histogram, kernel density plot, two wayscatter.

Unit-IV Linear regression basics: data description, variable description, summary statistics, OLS regression, specification analysis, prediction, margins.

Text Book:

1. Cameron, A. C. and P. K. Trivedi (2009). Microeconometrics using stata. Stata press CollegeStation, TX

ECC301: Econometrics I

Course Objective

This course provides a comprehensive introduction to basic econometric concepts and techniques. It covers estimation and diagnostic testing of simple and multiple regression models, and prepares students for more advanced optional courses in econometrics.

Course Learning Outcomes

- The course prepares students to apply linear models using ordinary least squares and make inferences about population parameters.

Unit-I: Introduction: Nature, Meaning and Scope of Econometrics, Distinction between Economics and Econometrics, Statistics and Econometrics, Mathematics and Econometrics, Stages of Econometric Research

Unit-II: Review of Statistics: Probability, Sampling and sampling distribution, Estimation of parameters, testing of hypotheses

Unit-III: Classical Linear Regression Model: Two variable case: Concepts and assumptions, Two variable linear regression model: estimation through OLS, Properties of Least Square Estimation

Unit-IV: Multiple Linear Regression Model: Concepts and assumptions, Multiple variable regression- Matrix Approach, Functional forms of regression models, concept of dummy variables, non-linear regression models

Recommended books:

Text Books:

1. Gujarati, D.N. (1995). *Basic Econometrics* (2ndEdn.). McGraw Hill, New Delhi.
2. Johnston, J. (1991). *Econometric Methods* (3rdEdn.). McGraw Hill, London.

Reference Books

1. Koutsoyiannis, A. (1977). *Theory of Econometrics* (2ndEdn.). The Macmillan Press Ltd., London.
2. Pindyek, R.S. and D.L. Rubinfeld (1976). *Econometric Models and Economic Forecasts*; McGraw

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. It aims to train students on various developmental issues, challenges and policy paradigms of the Indian economy.

Course Learning Outcomes

- Students understanding about the functioning of Indian economy gets enriched and they are able to critically evaluate the impact of various policies and programmes on promoting social and economic progress with the help of various indicators

Unit-I: Economic Development since Independence: Major features of the Indian Economy at Independence; Growth and Development of Economy since Independence

Unit-II: Population and Economic Development: Demographic trends and issues, Education, Health and Malnutrition

Unit-III: Growth and Distribution : Trends in poverty, inequality and unemployment, policies for eradicating poverty and generating employment

Unit-IV Policies and Performance in Agriculture: Growth; productivity; agrarian structure and technology; capital formation; trade; Green revolution

Reference Books:

1. Dhingra, Ishwar C. (2005); *The Indian Economy: Environment and Policy*, Sultan Chand and Sons, New Delhi
2. Datt, Ruddar and Sunderam, K.P.M. (2005); *Indian Economy*, S. Chand & Co., New Delhi
3. Mishra, S.K. & Puri, V.K.; *Indian Economy*, Himalaya Publishing House, Delhi (Latest Version)

ECC303: International Economics

Course Objective

The course provides a broad understanding on the application of microeconomic and macroeconomic tools in the International Economic Theory. This course covers various theories which tend to govern the free flow of trade in goods, services and capital at global level.

Course Learning Outcomes

With the completion of this course, students would be able to:

- ✓ Understand how real world events lead to economic and financial crises in emerging markets.
 - ✓ Analyse the gains from International trade and from restricting trade.
 - ✓ Explain how various factors like reciprocal demand, factor endowment, technology, economic growth etc.affect nation's Terms of Trade.
-

Unit –I: Introduction: Discussion on subject matter of International Economics, Current International Economics Problems, Looking at the Bigger Picture-How Important is Trade or Why should we care about International Trade?

Analytical Tools-Production Possibility Curve(PPC),Community Indifference Curve(CIC), Iso-Quant & Iso-Cost(IQ &IC) Curves, Offer Curve(OC)

Unit –II: Basic Models of Trade: Explaining who sells to whom and why?Theory of absolute advantage Difference in Technique-The Ricardian Trade Model (Theory of comparative advantage and opportunity costs) Difference in Endowment- The Heckscher- Ohlin (H-O) Model, Empirical Testing of H-O Model-Leontief Paradox, Factor Intensity Reversal (FIR), Gains from Trade - Measurement of gains from trade.

Unit –III: Concept of Terms of Trade and Factors affecting Terms of Trade, Hypothesis of Secular Deterioration of Terms of Trade, Trade as an Engine of Economic Growth

Unit –IV: Meaning and Components of Balance of Payments, Equilibrium and disequilibrium in the Balance of Payments, Causes of disequilibrium in the Balance of Payments and Measures to correct adverse Balance of Payments.

Text Books:

1. Salvatore.D.: International Economics,8/e,Wiley publication.
2. Kugman.P, Obstfeld M, Melitz,M : International Economics Theory and Practice, 10/e, Pearson.

Reference Books:

1. Chacoliadas: International Trade, Theory and Policy, Mc.Graw Hills
2. Deepak Nayyar: Trade and Industrialisation, Oxford University Press
3. Soderston, B.: International Economics, TheMcmillan Press Ltd. London
4. Cherunilam: International Economics, Tata McGraw Hill,5th edition

ECC351: Econometrics II

Course Objective

This course covers the nature, consequences, tests and remedies for violations of classical assumptions and the consequence for misspecification of regression models. It also introduces simultaneous model building and some basic applications of least square method.

Course Learning Outcomes

- Students understand theoretical basis and applications of linear models in empirical research using ordinary least squares in a wide range of problems and make analysis.
- Able to treat various sampling and non-sampling errors and selection biases of variables while applying OLS.

Unit-I : Violations of Classical Assumptions and Remedies: Problems of heteroscedasticity, autocorrelation and multicollinearity: Nature, test, consequences and remedial measures

Unit-II: Specification Analysis: Types of specification errors, consequences of model specification errors, tests and errors of measurement, incorrect specification of the stochastic error term, Model selection criteria

Unit-III: Simultaneous Equation Models: Introduction- structural form, reduced form, recursive form and final form model. The simultaneous equation bias and inconsistency of OLS estimators, The identification problem- order and rank conditions of identification

Unit IV: Simple Application of Least Squares Recursive models and Ordinary Least Squares, ILS, 2SLS, 3SLS

Recommended books:

Text Books:

1. Gujarati, D.N. (1995). *Basic Econometrics* (2ndEdn.). McGraw Hill, New Delhi.
2. Johnston, J. (1991). *Econometric Methods* (3rdEdn.). McGraw Hill, London.

Reference Books

1. Koutsoyiannis, A. (1977). *Theory of Econometrics* (2ndEdn.). The Macmillan Press Ltd., London.
2. Pindyek, R.S. and D.L. Rubinfeld (1976). *Econometric Models and Economic Forecasts*; McGraw

ECC352: Indian Economy II

Course Objective

The objective of this course is to broaden the knowledge of students on select facets of the Indian economy. It aims at to make a critical analysis of sector-specific policies and their impact in shaping trends in key economic indicators in India. The course prepares students for a deeper understanding of major policy debates through empirical evidence.

Course Learning Outcomes

- At the end of the course, a student should be able to understand the role of economic policies in shaping and improving economic performance in agriculture, manufacturing and services

Unit 1: Macroeconomic policies and their impact

Unit 2: Policies and performance in agriculture

Unit 3: Policies and performance in industry and services

Unit 4: Labour and employment

References

Given the topical nature of this course, readings will be updated from year to year.

Anand, R., Kochhar, K., Mishra, S. (2015). Make in India: Which exports can drive the next wave of growth? IMF working paper, WP/15/119. 24 2.

Banga, R. (2014). Trade facilitation and 'hollowing-out' of Indian manufacturing. *Economic and Political Weekly*, 49(40), 57-63.

3. Basole, A., Basu, D., Bhattacharya, R. (2015). Determinants and impacts of subcontracting: Evidence from India's unorganised manufacturing sector. *International Review of Applied Economics*, 29, 374-402.

4. Bhagwati, J., Panagariya, A. (2012). A multitude of labor laws and their reforms. In *India's tryst with destiny*. Collins Business.

5. Centre for Sustainable Employment. (2018). *State of working India 2018*. Azim Premji University.

6. Chanda, R. (2017). Services for Indian manufacturing. In M. Dev (ed.) *India Development Report*.

7. Chatterjee, S., Kapur, D. (2017). Six puzzles in Indian agriculture. *India Policy Forum 2016*, Vol. 17.

8. Das, D., Singh, J., Choudhury, H. (2018). Judicial production of labour market flexibility: Contract labour employment in Indian organised manufacturing. In Hill and Patil (eds.): *Employment policy in emerging economies*. Routledge.

9. Deakin, S., Halder, A. (2015). How should India reform its labor laws? *Economic and Political Weekly*, 50(12), 48-55.

10. Gulati, A., Saini, S. (2017) 25 years of policy tinkering in agriculture. In R. Mohan (ed.): *India transformed: 25 years of economic reforms*. Penguin.

11. Kapoor, R., Krishnapriya, P. (2019). Explaining the contractualisation of India's workforce. *ICRIER Working Paper 369*.

12. Kumar, N. (2015). FDI and portfolio investment flows and development: A perspective on Indian experience. In U. Kapila (ed.): *Indian economy since independence*, 26th ed. Academic Foundation.

13. Ministry of Finance. (2017). Climate, climate change and agriculture. Ch. 6 in *Economic Survey*.

14. Mohan, R., Ray, P. (2017). Indian financial sector - structure, trends and turns. IMF working paper.

15. Panda, M. (2017). Macroeconomic development and challenges for growth. In M. Dev (ed.): *India Development Report*.

16. Rajesh, S., Sen, K. (2016). Some puzzles about firms. *Economic and Political Weekly*, 51(7), 43-51.

17. Roychowdhury, A. (2019). Application of job security laws, workers' bargaining power and employment outcomes in India. *The Economic and Labour Relations Review*, 30, 120-141.

18. Sen, K., Das, D. (2015). Where have all the workers gone? The puzzle of declining labour intensity in organised Indian manufacturing. *Economic and Political Weekly*, 50(23), 108-115.

19. Veeramani, C., Dhir, G. (2017). Make what in India? In M. Dev (ed.): *India Development Report*

ECC353: Mathematical Economics

Course Objective

This course will give the learner overview of the different mathematical techniques that are used to solve economic problems. The course aims to impart scientific, logical and critical thinking and help learners in taking economic decisions.

Course Learning Outcomes

- Students are trained in the applications of various mathematical formulations for explaining economic problems and decision making

Unit-I : Number System, Set Theory and Function: Number system, Set Theory, Linear and non- linear functions, convexity and concavity, building models, application in economic theory

Unit II : Matrices: Operations and Applications: Elementary mathematical operation with matrices, Rank of the matrix, matrix inversion, Application of matrices to the Market Model and National Income Model, Input-Output Analysis

Unit-III: Differentiation and Integration: Rules of Differentiation; Maxima and Minima - unconstrained and constrained, Linear Programming: Basic concept; Formulation of a LP problem; Nature of feasible, basic and optimal solutions; Solution of a LP problem through graphical method; Formulation of the Dual and Its interpretation; Rules of integration, Indefinite and Definite Integrals; Applications in Economic Theory.

Unit IV: Difference and Differential Equations: Differential Equations: Definitions and concepts; Solution of First order and Second order differential equations, Applications of differential equations in Economics. Difference Equations: Definitions and concepts; Solution of First order and Second order difference equations, Applications of difference equations in Economics.

Recommended Books:

Text Books:

1. Chiang, A.C. (1974). Fundamental Methods of Mathematical Economics, McGrawHill
2. Handerson and Quandt, Microeconomic Theory- A Mathematical Approach, Tata McGraw-Hill

Reference Books:

1. Bez, K. (1983). An Introduction to Input Output Techniques, N.B.T., Goel PublishingHouse, Meerut.
2. Handry, A.T. (1999). Operation Research, Prentice Hall of India, New Delhi.
3. Taha, H.A. (1997). Operation Research: An Introduction (6th Edn.). Prentice Hall of IndiaPvt.Ltd., New Delhi

ECC401: Advanced Microeconomics

Course Objectives

This course equips students to understand consumer behavior and economic decisions making by households and firms and their interaction. It provides knowledge of producer behavior and production decisions using production functions and isoquant analysis. It also studies the equilibrium in presence of externalities/public goods and information asymmetry. Additionally, there will be a discussion of social choice theory and welfare economics.

Course Learning Outcomes:

Upon successful completion of this course, students will be able to:

CLO1: Analyse and appraise cardinal, ordinal and revealed preference approaches to consumer behaviour and able to Discuss various concepts of elasticity and its measurement.

CLO2: Apply the concept of elasticity in business decision making.

CLO3: Discuss the behaviour of production in short run and long run.

CLO4: Apply the theory of production in producer's decision making.

CLO5: Describe various revenue concepts and explain the behaviour of revenue under different market structures.

CLO6: Analyse short run and long run equilibriums under perfect competition and monopoly.

CLO7: Discuss the models of general equilibrium.

CLO8: Analyse the problems related to general equilibrium.

CLO9: Appraise various criteria for economic welfare.

Unit 1: Theory of demand: Utility analysis – Utility analysis; The indifference curve theory: Price, income and substitution effects (Hicks and Slutsky's views), Breaking up the Price effect into income and substitution effects; Normal, inferior and Giffen goods; Violation of the premises about indifference curves; Satiation and Lexicographical orderings; Elasticity of demand: Price, income and cross elasticity of demand, Elasticity of substitution; The Revealed Preference Theory.

Unit 2: Theory of Production: Concepts of production function, Product curves and Iso quants; Laws of production: Law of variable proportions, Stages of production. Degree of homogeneity and Laws of returns to scale, Ridge lines, Iso-cost line, Choice of optional combination of factors, Expansion path; Types of production function: Cobb Douglas, The CES and the Fixed coefficient production functions.

Unit 3: Market Structure: Basic concepts of Revenue, Relationship between Average Revenue, Marginal Revenue and price elasticity of demand; Theory of cost in the short run and long run, Market structure: Perfect Competition: Short run and long run equilibrium of a firm and industry. Monopoly: Short run and long run equilibrium of a monopolist; Price discrimination under monopoly. Monopolistic competition: product differentiation and the demand curve, short run and long run equilibrium of a firm. Oligopoly: Non-collusive oligopoly: The Duopoly models of Cournot and Bertrand, model;

Unit 4: Market Failure: Externalities: Environment and its impact on market, Common property resources and public goods, : Types of asymmetric information-Moral hazard, Adverse selection, Signalling; Market for lemons; Principal agent problem; Efficiency of market outcomes under asymmetric information.

Unit 5: General Equilibrium and Welfare:

Edgeworth box: 2 good, 2 factor, 2 consumer analysis and Pareto optimality conditions; market trade; Walras Law; Relative prices; Equilibrium and efficiency; Grand Utility possibility frontier. Implication of first and second welfare theorem, Compensation principle: Kaldor-Hicks criterion; The Bergson criterion: Social welfare functions

Recommended Books:

Text Books:

1. Koutsoyiannis: A Modern Microeconomics
2. Henderson and Qandt: Microeconomic theory: A Mathematical Approaches

Reference Books:

1. Karl. E. Case, Ray C. Fair, Sharon E. Oster: Principles of Microeconomics, 12/e, Pearson Publication.
2. Varian, H : Micro Economic Analysis, W.W. Norton, New Delhi
3. R.Glenn Hubbard & O'Brien: Microeconomics, 7/e
4. Baumol, William J.: Economic theory and operations analysis (4th ed), PHI, new Delhi
5. Dominick Salvatore: Principles of Microeconomics, OUP India.
6. Ferguson & Gould: Microeconomic Theory, 6/e
7. Nicholson & Snyder: Microeconomic Theory, 11/e

Eighth Semester

ECC 451: Advanced Macroeconomics

Course Objective

The purpose of teaching Advanced Macroeconomics is to acquaint students with the broad paradigms of Macroeconomic Theory with a focus on contemporary models and provide an exposure to international perspectives.

Course Learning Outcomes

- Student is trained in solving the complex issues related to the functioning of demand and supply factors with the help of models and their practical applications
- One gets better understanding of economic policies in achieving equilibrium after completing this course

Unit-I: Aggregate Demand and Aggregate Supply: Introduction to aggregate demand and Aggregate supply , Wages price and unemployment & Phillips curve analysis .Equilibrium output, consumption function and multiplier .

Unit-II: Equilibrium in the Economy: IS-LM model- money interest and income, Open economy, Balance of payment, Mundell- Fleming model (Exchange rate, types, determination under fixed and flexible exchange rate)

Unit-III: Economic Growth Theories: Neo- classical growth theory model [exogenous growth theory] Endogenous growth theory model –[investment in Human capital] and policy implications of New growth theory.

Unit-IV: Policy Issue: Economic policies -- Monetary and Fiscal and their effect on the equilibrium output—Expectations and reactions .

Recommended Books:

Text Books:

1. Rudiger Dornbusch, Stanley Fischer and Richard Startz; “Macroeconomics”, Tata McGraw-Hill, Ninth Edition
2. H.L.Ahuja; “ MACROECONOMICS [Theory and Policy] S.Chand & COMPANY PVT.LTD. Latest Edition
3. Mankiw, N.G. Macroeconomics (Worth) most recent edition

Reference Books:

1. Carl E. Walsh, Monetary Theory and Policy (3rd ed., MIT Press, 2010).
2. David Romer, Advanced Macroeconomics (3rd ed.)
3. Dejong, D. N. and C. Dave, Structural macroeconometrics, Princeton Univ. Press 2007

Detailed Syllabus of Elective Courses

Third Semester (Choose one elective course)

ECE201: History of Economic Thought

Course Objective

The course is designed to familiarize the students about the gradual encroachment of economic ideas and theories since the 16th century. It provides an understanding of how the economic theories evolved in their historical context and how they influenced the modern economic theories in later years.

Course Learning Outcomes

- Students understand about the gradual development of economic ideas and related theories with critical analysis
- Equipped to make decisions with the help of theoretical explanations

Unit-I Mercantilists and Physiocrats: Historical forces that led to the birth of these schools of thought, their salient features and policies, their influence on economics in subsequent time period

Unit-II Adam Smith and Birth of Economics: Chief contributions; Division of labor and capital; Free Trade; Theory of value: unit cost; Wages; Profits; Rent, The Invisible Hand, Malthus's theory of population; Chief contributions of Ricardo.

Unit-III Karl Marx and Socialism: Characteristics of Marxism, Dialectical Materialism, Theory of Capitalism, Class Struggle, Labour theory of value, Exploitation

Unit-IV John Maynard Keynes and Milton Friedman: Keynes vs Classicals, Consumption function, Effective Demand; The Multiplier, The Demand for Money, Milton Friedman chief contributions

Recommended books:

Reference Books:

1. Blaug, M. (1988); Economic Theory in Retrospect, Cambridge University Press, Cambridge
2. Eakelund, R.B. and R. Rebert (1983); A History of Economic Theory and Method, McGrawHill, New York

ECE202: Banking and Monetary Economics

Course Objective:

This course mainly covers the monetary part in good detail which includes modern theories of money, banking and recent developments in the analysis of monetary policy.

Course Learning Outcomes

After completion of this course, students will be able to

- ✓ explore theory and functioning of the monetary and financial sectors of the economy
 - ✓ look at some key issues of financial markets, monetary policy and banking
 - ✓ Analyze and evaluate the effect of their interaction in the real world.
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UNIT-I Introduction: Evolution & Functions of Money, Circular Flow of money, Role of Money in Capitalistic, Socialistic & Mixed Economy, **Classical Theory of Money:** Say's Law and Walras' Law; Classical dichotomy and the neutrality of money

UNIT-II Demand for Money: Theories of Demand for Money – Fisher and Cambridge versions, Approaches of Keynesian, Friedman, Patinkin, Baumol, Tobin., Pigou Effect and Real Balance Effect.

UNIT-III Components of Money Supply: Supply of Money, Determinants of money supply, High – powered money, Money multiplier, **Role, constituents and functions of money and capital markets:** RBI – recent monetary and credit policies, Commercial banks and Co–Operative Banks, Specialized financial and investment institutions, Non–Bank Financial Institutions and Regional Rural Banks.

UNIT-IV Monetary Policy: Goals, targets, indicators and the transmission mechanism; instruments of monetary policy, **Monetary Management in An Open Economy:** International capital markets, portfolio diversification; the International Monetary System; Monetary Policy in India's Open Economy; Financial Sector Reforms in India. The Narasimham Committee Report.

Reference Books:

1. Carl Walsh, “Monetary theory & Policy”, 4/e, The MIT Press
2. M.K. Lewis & Paul Mizen, “ Monetary Economics”, Oxford University Press.
3. T.N Hajela Money Banking & Public finance, 8/e, Ane Books India, 2009
4. S. Frederic Mishkin, “Monetary Policy Strategy”, MIT Press..
5. M.R. Baye, D.W. Jansen (1996), Money Banking and Financial Markets, AITBS, (Indian Edition) R.B.I. Bulletin, Annual Report; Report on Currency and Finance
6. Y.V. Reddy (2000), “Monetary and Financial Sector Reforms in India” , UBSPD, New Delhi
7. Various latest issues of R.B.I. Bulletins, Annual Reports, Reports on Currency and Finance and Reports of the Working Group, IMF Staff Papers.

Fourth Semester
(Choose one elective course)

ECE251: Gender Economics

Course Objective:

Gender biases in societal practices and development policies have resulted in persistent gender inequalities. It is increasingly being realized that mitigating such inequalities and enhancing women's capabilities and entitlements are crucial to the overall development of the country. This course would provide students an understanding of the nature of the economic role of women and their contribution to the national economy.

Course Learning Outcomes

After completion of this course, students will be able to

- ✓ Understand the key issues related to women's welfare, development and empowerment at the theoretical level and also with regard to specificity of issues prevailing in the Indian context.
- ✓ Analyze gender specific inclusive economic growth through equal endowments and economic participation for women.
- ✓ Explore alternative gender specific economic theories and apply these theories in the real world.

UNIT-I Economics and Gender Bias: Feminist criticism of development indices (Gary Becker); Theories of Gender inequality: Biological and Structural; Theories of Gender inequality: Feminist; Feminist reading of Economic Laws: Marginal Productivity Theory and Laws of Maximization.

UNIT-II Women: Demographic Aspect: Demography of female population: Age structure, Mortality rates and Sex ratio; Causes of declining sex ratios and fertility rates in LDCs with special reference to India; Theories and measurement of fertility and its control; Gender and population control policy with special reference to India.

UNIT-III Women and Labour Markets: Factors affecting female entry in labour market; Female work participation in agriculture and non-agricultural activities (with reference to India); Wage differentials in female activities; Determinants of wage differentials: gender, education, skill, productivity, efficiency.

UNIT-IV Gender Planning, Development Policies and Governance: Mainstreaming gender into development policies; Gender Planning techniques and gender sensitive governance; Paradigm shifts from women's well-being to women's empowerment; Democratic decentralization and women's empowerment in India.

Reference Books and Research Papers:

1. Amsden, A.H. (ed.). (1980). *The Economics of Women and Work*, Penguin, Harmondsworth.
2. Boserup, E. (1970). *Women's Role in Economic Development*, George Allen and Unwin, London.
3. Carr, M.C. Matha and R. Jhabvala (eds.) (1997). *Speaking Out: Women's Economic Empowerment in South Asia*, Vistaar Publications, New Delhi.
4. Kalpagam, U. (1994). *Labour and Gender: Survival in Urban India*, Sage Publications, New Delhi.
5. Krishnaraj, M., R.M. Sudarshan and A. Shariff (1999). *Gender, Population and Development*, Oxford University Press, New Delhi.
6. Mitra, A. (1979). *Implications of Declining Sex Ratio in India's Population*, Allied, New Delhi.
7. Papola, T.S. and A.N. Sharma (eds.) (1999). *Gender and Employment in India*, Vikas Publishing House, New Delhi.

8. Seth, M. (2000). *Women and Development: The Indian Experience*, Sage Publications, New Delhi.
9. Government of India (1974). *Towards Equality - Report of the Committee on the Status of Women in India*, Department of Social Welfare, Ministry of Education and Social Welfare, New Delhi.
10. ILO (1978). *Women's Participation in the Economic Activity of Asian Countries*, ILO, Geneva.
11. MHRD, Government of India, (1987). *Shram Shakti: Report of the National Commission on Self-Employed Women and Women Workers in the Informal Sector*, Ministry of Human Resource Development, New Delhi.
12. Narasimhan, S. (1999). *Empowering Women: An Alternative Strategy from Rural India*, Sage Publications, New Delhi.
13. Papola, T.S. and A.N. Sharma (eds.) (1999). *Gender and Employment in India*, Vikas, New Delhi.

Fifth Semester
(Choose one elective course)

ECE301: Agricultural Economics

Course Objectives

The course aims at to equip students with the basic knowledge of various principles of economics that are applied to agriculture, particularly in relation to demand, supply, production, costs, markets and profits. in competitive and non-competitive and the role of agriculture in India. Other topics include a survey of the world food situation; natural, human and capital resources; commodity product marketing; and agricultural problems and policies.

Course Learning Outcomes

- The course enables students to demonstrate a basic knowledge of the principles of economics and their application to understand issues pertaining to agricultural development.

Unit-I Economics and Economic Growth: Characteristics of Agriculture, Definition of Agriculture ,Agricultural Economics as a Social Science, Structure of Agriculture Sectors , Inputs Used and Products of Agriculture

Unit-II Principles of Economics: Production Principles , Production Costs, Supply and Revenue , Principles of Profit Maximization and Loss Minimization, Principles of Consumption and Demand, Price Elasticity Concepts , Principles of Market Price Determination, Competitive vs. Non- Competitive Market Models , Global Issues

Unit-III Population Growth, World Food Production Trends , Trade in Agricultural Products , The Role of Agriculture in Economic Growth , Marketing Food and Agricultural Products , Functional and Institutional Approaches to Marketing , Costs of Marketing Food and Agricultural Products , Operation of the Futures Markets , Agricultural Problems and Policy Analysis , Goals and Policies and Programs , Price and Income , Resource Use (May Include: Natural Resources, Land Economics, Locally Grown Foods, etc.)

Unit-IV Agricultural Sector based measuring the National Economy: The Circular Flow of Income , Measuring Inflation, Unemployment , Nominal vs. Real Income, Macroeconomic Policies, Fiscal Policies , Monetary Policies , International Trade , Absolute vs. Comparative Advantage, Exchange Rates , . Balance of Trade, Balance of Payments, Trade Policies (All Agriculture Related)

Recommended Books:

Text Books:

1. Cramer, Jensen, and Southgate, John Wiley, “Agricultural Economics and Agribusiness”
2. Drummond and Goodwin , “Agricultural Economics”, Prentice Hall

Reference Books:

1. Penson, Capps, and Rosson , “Introduction to Agricultural Economics” , Prentice Hall
2. Seitz, Nelson, Halcrow , “Economics of Resources, Agriculture and Food”

Course Objectives

This course introduces students to the economics of finance. Some of the basic models used to benchmark valuation of assets and derivatives are studied in detail; these include the CAPM, and the Binomial Option Pricing models. The course ends with a brief introduction to corporate finance.

Course Outcomes

- Students learn various dimensions of finance, investment, returns and functioning of capital markets
- Get exposure to apply valuation of assets and derivatives in real world situations
- Understand the role of corporate finance

Unit 1: Investment Theory and Portfolio Analysis

a. Deterministic cash –flow streams: Basic theory of interest; discounting and present value; internal rate of return; evaluation criteria; fixed income securities; bond prices and yields; interest rate sensitivity and duration; immunisation; the term structure of interest rates; yield curves; spot rates and forward rates.

b. Single- period random cash flows: Random asset returns; portfolios of assets; portfolio mean and variance; feasible combinations of mean and variance; mean --- variance portfolio analysis; the Markowitz model and the two-fund theorem; risk free assets and the one- fund theorem.

c. CAPM: The capital market line; the capital asset pricing model; the beta of an asset and of a portfolio; security market line; use of the CAPM model in investment analysis and as a pricing formula.

Unit 2: Options and Derivatives: Introduction to derivatives and options; forward and futures contracts ; options ; other derivatives ; forward and future prices; stock index futures ; interest rate futures ; the use of futures for hedging ; duration based hedging strategies ; option markets; call and put options; factors affecting option prices; put- call parity; option trading strategies ; spreads ; straddles strips and straps ; strangles ; the principle of arbitrage ; discrete processes and the binomial tree model; risk – neutral valuation.

Unit 3: Corporate Finance: Patterns of corporate financing ; common stock ; debt ; preferences ; convertibles , Capital structure and the cost of capital ; corporate debt and dividend policy ; the Modigliani-Miller theorem.

Readings:

1. David G. Luenberger , Investment Science , Oxford University Press, USA,1997.
2. Hull, John C, Options, Futures and other Derivatives , Pearson Education , 6th edition , 2005.
3. Thomas E Copeland , J . Fred Weston and Kuldeep shastri , Financial Theory and corporate policy , Prentice Hall , 4th edition , 2003.
4. Richard A. Brealey and Stewart C. Myers , Principles of Corporate Finance , McGraw- Hill, 7th edition , 2002.
5. Stephen A. Ross, Randolph W. Westerfield and Bradford D. Jordan , fundamentals of corporate finance . McGraw- Hill, 7th edition ,2005.
6. Burton G Malkiel , A Random Walk Down Wall street , W.W Norton \$ company, 2003.
7. William Sharpe , Gordon Alexander and Jeffery Bailey, Investments , Prentice Hall of India , 6th edition, 2003.

Sixth Semester
(Choose one elective course)

ECE351: Basics of Economic Psychology

Course Objective

This course is intended for students interested in research. This course integrates psychological insights into economic models of behavior. The purpose of this course is to develop an understanding of the main economic phenomena in everyday life from psychological point of view.

Course Learning Outcome

After completing this course, students will understand why people do not always act rationally. They will be able to analyze economic phenomena from a wider perspective.

Unit I: Introduction to Economic Psychology

Meaning of Economic behavior, and Economic psychology, history, fields of study, methods of study, and future of the science, Intersection of Economics and Psychology, introduction to Behavioural Economics and Neuroeconomics

Unit II: Psychology of money:

Why we need money and Experiments with money, Psychoanalysis and the symbolism of money, psychological understanding of poverty, Causes of poverty, Attitudes toward the poor, Behavior of the poor, psychological meaning of employment and unemployment. Unemployment and health

Unit III: Necessities, luxuries and wealth

Distinction between necessities and luxuries, Psychoanalysis and wealth, wealth and happiness Psychological and economic motivation of entrepreneurs

Unit IV: Psychology and motivation

Meaning of Entrepreneur, Psychological and economic motivation of entrepreneurs. Charity or taxation? Reducing tax evasion, Psychological Games

Reference books:

1. Inefficient Capital Markets: An Introduction to Behavioral Finance. Shleifer, Andrei. Oxford UP, 2000.
2. The Winner's Curse: Paradoxes and Anomalies of Economic Life. Thaler, Richard. Princeton, N. J.: Princeton University Press, 1994.

Course Objective

This course provides a general introduction to the field of labour economics and as such is an application of basic microeconomic principles. Its approach to studying labour economics will be both theoretical and empirical. That is, not only will we discuss models of how labour markets function, we will also discuss the evidence on how well the real world matches the predictions of such models.

Course Learning Outcome

- Students are able to comprehend theoretical and empirical nuances of Labour Economics in real world situations
- Their understanding about the functioning of labour markets and persistence of imperfection therein due to informational and other asymmetries

Unit-I Introduction: Meaning- Concept, Significance and Peculiarities of Labour. Nature, Scope and Importance of Labour Economics. Actors of Labour, Economics, Characteristics of Indian Labour Market.

Unit-II Labour Supply: Measuring the labour force: employment and unemployment rate, labour force participation rate, workers preferences, differences in preferences across workers, effect of non-labour income on working hours, effect of wage rate change on working hours, income, reservation wage, labour supply curve, labour supply elasticity.

Unit-III Labour Demand: Employment decision in short run and long run labour demand curve for a firm and industry, firm output decision,, impact of wage change on output and employment, Labour demand elasticity, employment effects of minimum wages, minimum wage as antipoverty program.

Unit-IV Labour Market Equilibrium: Meaning, concept, competitive equilibrium across labour markets, impact of immigration on labour market in short run and long run economic benefits of immigration, immigration surplus.

Recommended Books:

Text Book:

1. George. J. Borjas, Labour Economics (McGraw. Hill International edition) 6th ed.

Reference Books

1. Stephen Smith, Labour Economics (Routledge) 2nd edition
2. Lloyd. G. Reynolds, Labour Economics and labor relations (Prentice Hall) 6th edition

Seventh Semester
(Choose any two elective courses)

ECE401: Public Policy- Theory and Practices

Course Objectives:

This course acquaints students with foundational concepts of public policy and develops understanding of institutional frameworks and the political, social, and economic contexts shaping public policy. It equips learners with critical thinking skills for evaluating policy outcomes and understanding of the evolution of Indian public policy in addressing inequality.

Course learning Outcomes:

By the end of this course, students will be able to:

COL1: Understand and articulate the foundational concepts of public policy, including its multidisciplinary nature and relevance in democratic governance and social engineering.

COL2: Critically analyse the institutional, political, and societal contexts that shape public policy formulation, implementation, and evaluation.

COL3: Compare and contrast various public policy models and tools of policy analysis, and apply them to real-world policy scenarios across sectors such as health, education, foreign affairs, and financial markets.

COL4: Trace the historical evolution of public policy in India, understand the role of key institutions, and analyse contemporary policy-making in relation to India's economic and social development.

COL5: Develop critical thinking and policy reasoning skills necessary for problem-solving in public governance, with the ability to engage in evidence-based policy debates and case study analysis.

Unit-I Public Policy and Institutionalism: Introduction to Public Policy; Public Policy as Multidisciplinary Governance Tool; Social Engineering and Social Construction in the political and institutional environment; Sector Application of Public Policy; Policy impacts; collective action, Public opinion, Market and Rational Problem solving; Democratic Society and Public Policy; Developing critical thinking.

Unit-II Models of Public Policy: Creation and Implementation: Political institutions and processes involved in creation and implementation of Public Policy; Models of Public Policy; Politics of program and Policy Evaluation. Tools of Policy Analysis; understanding long term policy trends and reconsiderations and validation; Social Policy Making- Case Study Approach (Medical insurance policy, Security and Financial market policy, Foreign policy, Demographic policy and Poverty

Unit-III Comparative Public Policy: Introduction to comparative Public Policy: Case Studies from UK, China and India in Health, Education and relevant sector; Public Policy and Gender, Inequality, Race; Understanding International Indexes-PQLI, HDI.

Unit-IV India, Indian Economy and Public Policy: Indian Public Policy and policy making institution; History of Indian Public Policy; The Institutions; Public Policy making in the primary

sectors- Agriculture and Industry; Indian Economy and Indian Institutions; Change and Development of Indian Public Policy during planning period.

Recommended Books:

1. Anderson, James E. Public Policy Making, Cengage Learning, 2014
2. Kraft, Michael E., and Scott R. Furlong. Public Policy, analysis and alternatives, CQ Press, 2012
3. Birkland, Thomas A. An Introduction to the Policy Process: Theories, concepts and models of Public Policy making. Gremese Editore, 2005
4. Bardhan, P. K. (1999). "Political Economy of Development in India: Expanded edition with an epilogue on the political economy of reform in India.", Oxford University Press, New Delhi.
5. Fischer, Frank and Gerald J. Miller, eds. Handbook of Public Policy Analysis: Theory, Politics and methods. CRC Press, 2006
6. Centre for Public Policy Papers (IIM Bangalore)
7. The Hindu Centre for Politics and Public Policy
8. Economic Survey of India-2012-13, Finance Ministry of India, GoI

ECE 402: Mathematics for Economists

Course Objective:

This course will give the learner an overview of the different mathematical/quantitative techniques that are used to solve economic problems. The course aims to impart scientific, logical and critical thinking and help learners in taking economic decisions.

Course Learning outcomes:

Upon successful completion of this course, students will be able to:

CLO1: Understand and apply foundational mathematical concepts such as number systems, set theory, and functions to construct and analyse economic models.

CLO2: Perform matrix operations and apply them to economic models including market equilibrium, national income determination, and input-output analysis.

CLO3: Use techniques of differentiation, integration, and linear programming to solve optimization problems and interpret their economic significance.

CLO4: Solve and apply difference and differential equations to dynamic economic models, and gain introductory knowledge of computational tools in economics.

Unit-I Number System, Set Theory and Function: Number system, Set Theory, Linear and non-linear functions, convexity and concavity, building models, application in economic theory

Unit II Matrices: Operations and Applications: Elementary mathematical operation with matrices, Rank of the matrix, matrix inversion, Application of matrices to the Market Model and National Income Model, Input-Output Analysis

Unit-III Differentiation and Integration: Rules of Differentiation; Maxima and Minima - unconstrained and constrained, Linear Programming: Basic concept; Formulation of a LP problem; Nature of feasible, basic and optimal solutions; Solution of a LP problem through graphical method; Formulation of the Dual and Its interpretation; Rules of integration, Indefinite and Definite Integrals; Applications in Economic Theory.

Unit –IV Difference and Differential Equations: Differential Equations: Definitions and concepts; Solution of First order and Second order differential equations, Applications of differential equations in Economics. Difference Equations: Definitions and concepts; Solution of First order and Second order difference equations, Applications of difference equations in Economics. An introduction to Computational Economics: Computational solution tools.

Recommended Books:

Text Books:

1. Chiang, A.C. (1974). Fundamental Methods of Mathematical Economics, McGrawHill
2. Handerson and Quandt, Microeconomic Theory- A Mathematical Approach, Tata McGraw- Hill

Reference Books:

1. Bez, K. (1983). An Introduction to Input Output Techniques, N.B.T., Goel Publishing House, Meerut.
2. Handry, A.T. (1999). Operation Research, Prentice Hall of India, New Delhi.
3. Taha, H.A. (1997). Operation Research: An Introduction (6th Edn.). Prentice Hall of India Pvt. Ltd., New Delhi

ECE 403 : Research Methodology

Course Objectives

This course aims to enhance students understanding about the fundamental concepts and importance of research and research methodology, research processes, familiarisation and application of various sampling techniques, and impactful report writing.

Course Learning Outcomes

Upon successful completion of this course, students will be able to:

CLO1: Explain the meaning, objectives, and importance of research and distinguish between research methods and research methodology.

CLO2: Identify and formulate research problems and understand the steps and types involved in research design.

CLO3: Apply appropriate sampling techniques and determine sample size while evaluating sampling and non-sampling errors.

CLO4: Demonstrate an understanding of measurement and scaling, and identify sources of measurement errors.

CLO5: Formulate hypotheses and apply various tests of significance including t-test, f-test, z-test, chi-square, and analysis of variance (ANOVA).

CLO6: Develop and write comprehensive research reports, applying standard formatting and referencing styles with awareness of the mechanics and ethical considerations of report writing.

Unit-I Research: Meaning, Objectives, Importance; Research Methods and Methodology Research Problem, Research Process; Research Design: Meaning, Importance and Types; Steps in Research Design; Features of a Good Research Design

Unit-II Sampling: Meaning, Methods, Merits & limitations; Census and Sample method, Characteristics of a good sample; Sample size, its determination, and Sampling and Non Sampling errors; Steps involved in Developing Sampling design.

Unit-III Measurement and Scaling: Measurement in Research, Measurement scales, Source of error in measurement scales; Hypothesis: Meaning Procedure of Hypothesis testing; Tests of significance for small & large samples t, f, z test; Chi square: Meaning, Steps involved and its uses; Analysis of variance: meaning & Techniques of Analysis of variances

Unit-IV Report Writing: Significance, types, steps involved, Outline of a research report; Mechanics of a Report writing and precautions to be taken in Report writing; Different Referencing Style

Recommended Books:

Text Book:

1. Research Methodology in Applied Econometrics: Don Ethridge, 2/e

Reference Books:

1. Research Methodology: Methods and Techniques, C.R. Kothari, New Age International, New Delhi
2. Business Research Methods, Donald R Cooper, McGraw Hill, New Delhi
3. Statistical Methods, Dr. S.P.Gupta, Sultan Chand & sons, New Delhi
4. Research Methodology, Cauvery. R Sudhanayak U.K, Girija.M and Meenakshi. R.S. Chand & Company Ltd., New Delhi
5. Statistics for Management, Levin and Rubin, Asian Publishing House, New Delhi

ECE 404 : Indian Economy

Course Objectives

This course will help learners to develop a clear understanding of the structure and functioning of the Indian Economy. It will enhance their ability to analyze economic problems and policy measures critically. The course will also prepare students for competitive examinations, research, and higher studies related to Indian economic issues. Additionally, it will equip them with knowledge to understand current economic debates, sectoral challenges, and government initiatives for inclusive growth.

Course Learning Outcomes

CLO1: After completing this course, learners will be able to:

CLO2: Understand the basic structure, features, and developmental issues of the Indian Economy.

CLO3: Gain knowledge about major economic problems like poverty, unemployment, inflation, and inequality.

CLO4: Analyze the role of government policies, planning strategies, and economic reforms in India's development.

CLO5: Evaluate the growth and challenges of agriculture, industry, and service sectors in India.

CLO6: Understand the importance of government intervention and financial inclusion in promoting economic development.

UNIT I Basic features and problems of Indian Economy: Economic Development since Independence- Features of Indian economy, Nature of Indian Economy, characteristics of Indian Economy, growth and development & overview of planned economic development in India. Demographic features and Human Resource Development (HDI), Problems of Poverty, Unemployment, Inflation, income inequality, Black money in India; Case Studies

UNIT II Economic Policies: Economic Planning in India, various Five-year plans in India, objectives and critical evaluation of India's five-year plans, Planning Commission v/s NITI Aayog, LPG Reforms in India, New Economic Policy, 1991 and Economic Reforms; Case Studies.

UNIT III Sectoral comparison of Indian Economy: Agriculture Sector : Pattern of Growth of Indian Agriculture since 1950. Regional Imbalances in Indian Agriculture. Issues in Agriculture sector in India, Land reforms; Green revolution, New agriculture policy of India. Industrial sector : Industry Act, 1948, Industry Act, 1956, Industrial development, industrial Policy pre and post 1991, small scale and cottage industries, Public sector in India. Import substitution Industrialization; Service sector: India's foreign trade, India's Balance of payment since 1991, FDI in India, Impact of Globalization on Indian Economy, EXIM policy, WTO and India.

UNIT IV Government intervention and financial inclusion : Social security measures in organized and unorganized sector; Pension; Health and medical insurance; disability benefits; Maternity benefits; Gratuity; Employment Program and Poverty-Alleviation schemes; public distribution system; Indian banking sector .

Recommended Books:

Text books:

Datt, R. & Sundaram, K.P.M. *Indian Economy*. S. Chand & Company Ltd., New Delhi.

Mishra, S.K. & Puri, V.K. *Indian Economy – Its Development Experience*. Himalaya Publishing House, Mumbai.

Uma Kapila (Ed.). *Indian Economy since Independence*. Academic Foundation, New Delhi.

Reference Books/Journals/Reports:

Jean Drèze & Amartya Sen. *An Uncertain Glory: India and its Contradictions*. Penguin Books.

Bimal Jalan (Ed.). *The Indian Economy: Problems and Prospects*. Penguin Books India.

Arvind Panagariya. *India: The Emerging Giant*. Oxford University Press.

Vijay Joshi & I.M.D. Little. *India's Economic Reforms, 1991–2001*. Clarendon Press, Oxford.

Kurukshetra – A journal on rural development

Survey of India – Annual publication by the Government of India

Yojana – Published by the Ministry of Information and Broadcasting, Government of India

NITI Aayog Reports and Working Papers

Economic Survey of India – Published annually by the Ministry of Finance, Government of India

RBI Handbook of Statistics on Indian Economy

ECE 405: Tourism and Sustainable Development

Course Objectives

- Understand the role of tourism in national, regional and local development.
- Apply concepts of sustainable development to tourism and identify key socio-economic and ecological dimensions
- Equip students with relevant quantitative and qualitative methods for measuring and monitoring sustainability within the tourism sector
- Analyse the key environmental, socio-cultural and economic impacts of tourism
- Critically examine the policy initiatives and governance challenges associated with managing tourism for long-term sustainability

Course Learning Outcomes

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

1. Explain the inter-relationship between tourism, economic growth and sustainable development.
2. Apply the core concepts and principles of sustainability to the tourism sector.
3. Use appropriate tools to measure and interpret the economic and environmental impacts of tourism.
4. Assess the effects of tourism on local communities, natural resources and livelihoods
5. Critically assess policy initiatives and design recommendations for promoting sustainable tourism.
6. Learn about policy initiatives and assess their effectiveness for promoting sustainable tourism.

Unit 1: Fundamentals of Tourism and Sustainable Development

Concept and scope of tourism; demand–supply characteristics; multiplier effects and value-chain linkages; contribution of tourism to GDP, employment and trade; global trends and major regional patterns (with reference to India and Asia); tourism and the Sustainable Development Goals (SDGs); Tourism Satellite Accounts (TSA); contrasting models of tourism development (mass tourism vs eco-/community-based tourism).

Unit 2: Tourism and Sustainable Development: Interface

Concepts, definitions and approaches of sustainable tourism; economic, social and environmental pillars of sustainability; carrying capacity and resource pressures; participatory tourism planning; community-based, inclusive and low-impact tourism models; role of local institutions and stakeholders in promoting sustainable practices..

Unit 3: Measurement and Technical Aspects of Sustainable Tourism

Sources of tourism statistics; estimation of tourist flows and value added; input–output methods; TSA compilation; indicators of sustainable tourism (UNWTO, SDG indicators, etc.); Environmental Impact Assessment (EIA); Life Cycle Assessment (LCA) for tourism planning.

Unit 4: Policies and Strategies for Sustainable Tourism

International frameworks (UNEP, UNWTO, Agenda 21, COP declarations); national and state level tourism policies (with focus on India); Public-Private Partnerships (PPPs) in Sustainable Tourism Development; recent challenges – overtourism, post-COVID recovery, climate resilience; case studies of sustainable tourism initiatives in India and other developing countries.

Text Books

Sinclair, M.T & Stabler, M. (1998). *The Economics of Tourism*. Routledge

Fennell, D. A., & Cooper, C. (2020). *Sustainable Tourism: Principles, Contexts and Practices*. Multilingual Matters

Reference Books

Hannam, K., & Diekmann, A. (2010). *Tourism and India: A Critical Introduction*. Routledge.

Tisdell, C., & Wilson, C. (Eds.). (2012). *Handbook of Tourism Economics: Analysis, New Applications and Case Studies*. World Scientific Publishing.

Croes, R., & Yang, Y. (Eds.). (2022). *A Modern Guide to Tourism Economics*. Edward Elgar Publishing.

UNWTO (2022). *Tourism Highlights*. Madrid: World Tourism Organization

UNWTO, OECD & Eurostat (2010). *Tourism Satellite Account: Recommended Methodological Framework 2008*.

Weaver, D. (2006). *Sustainable Tourism: Theory and Practice*. Routledge.

UNEP/UNWTO (2005). *Making Tourism More Sustainable: A Guide for Policy Makers*

Ministry of Tourism, Government of India (Latest). *National Tourism Policy* (official document).

Articles

Liu, Z. (2003). “Sustainable tourism development: A critique”, *Journal of Sustainable Tourism*, 11(6), 459–475.

Saarinen, J. (2006). “Traditions of sustainability in tourism studies”, *Annals of Tourism Research*, 33(4), 1121–1140

Frechtling, D. (2010). “The Tourism Satellite Account: A Primer”, *Annals of Tourism Research*, 37(1), 136–153.

Seetanah, B. (2011). “Assessing the contribution of tourism to economic growth”, *Journal of Sustainable Tourism*, 19(8), 935–950.

Dwyer, L., Forsyth, P. and Dwyer, W. (2010). “Tourism Economics and Policy”, *Annals of Tourism Research*, 37(2), 647–666.

Eighth Semester
(Choose any two elective courses)

ECE451: Regional Economy of Himalayan States

Course Objective

Himalayan region is unique in terms of its geography and niches over other regions. The course aims at to enhance students understanding about regional issues of economic development in Himalayan states of India such as structural transformation, livelihoods, migration, poverty and quest for sustainable development. The course offers empirical analysis of regional economy of Himalayan states with the applications of appropriate economic theories and statistical tools of analysis.

Course Learning Outcome

CLO1: Students get exposure to the regional dimensions of development challenges in Himalayan states.

CLO2: They are equipped to undertake state-specific economic analysis relevant to policy planning.

Unit 1: Mountain Economies and their Development

Introduction- Regional economic development; Concepts and theories; Characteristics of mountain economies; Structural transformation and comparison with the Indian economy; Regional inequalities in select indicators of development; Multidimension poverty in Himalayan states; Development strategies for Himalayan region

Unit 2: Livelihoods, Employment and Migration

Livelihoods: Meaning, quality and diversification—land and other assets, education; Characteristics of labour force and workforce; Structural changes in employment and recent trends; Unemployment and underemployment; Characteristics of migration and migrant workers; Impact of outmigration on income and household economy; Covid-19 and reverse migration; Climate change and impact on livelihoods

Unit 3: Sectoral Aspects of Himalayan Economy

Agriculture: features and challenges; Industry: growth, composition and challenges Services sector; Trends, growth and challenges; Rural economy, Diversification of rural employment; Tourism and its impact on income; Micro, small and medium enterprises; Infrastructure and regional economic development

Unit 4: Sustainable Development

Context and the concept; Difference between economic growth, development and sustainable development; Form MDGs to SDGs; Sustainable Development Goals—targets, achievements and regional disparities; Public policy for promoting SDGs

Reading list

- Brunner Hans-Peter (Ed.) (2010). North East India Local Economic Development and Global Markets, Sage Publications
- Dikshit, K. R and J K Dikshit (Eds.) (2014): North East India Land People and Economy, Springer Publication
- Nayak. P. (Ed.) (2010). Growth and Human Development in North- East India, Oxford University Press.
- Bhattacharjee, G. (2014). The Reality of Special Category States, Economic and Political Weekly, 29 (40)
- Panda, B. (2010). "Economic Growth, Exclusion and Human Development in North Eastern Region of India" in P. Nayak (ed.) Growth and Human Development in North East India, Oxford University Press, New Delhi.
- Kumar N, Rani R. (2019). "Regional Disparities in Social Development: Evidence from States and Union Territories of India". *South Asian Survey*, Vol. 26(1):pp. 1-27
- Bhattacharya, Rakhee (ed) (2015). Regional Development and Public Policy Challenges in India, Springer
- Dawkins, Casey J. (2003). "Regional Development Theory: Conceptual Foundations, Classic Works, and Recent Developments", *Journal of Planning Literature*, Vol.18 (2), Sage Publications
- NITI Aayog (2021). Multidimensional poverty index, National Institution for Transforming India, New Delhi.
- Newsham, [Andrew](#); Rigg, [Jonathan and Suhardiman](#), Diana (2022). "A Sustainable Livelihoods Framework for the 21st Century", *World Development*, Vol. 155, July.
- Sengupta, R. P. *Ecological Limits and Economic Development*, Oxford University Press.
- Ray, Debraj - Development Economics
- Panagariya, Arvind and Megha Mukim (2014). "A Comprehensive Analysis of Poverty in India", *Asian Development Review*, vol. 31, no. 1, pp. 1–52
- United Nations (2021). *Sustainable Development Goals Report 2021*, United Nations, New York.
- Pike , Andy; Rodríguez-Pose, Andrés and Tomaney, John (2006). *Local and Regional Development*, Routledge. (Chapter 1 and 3)
- Mamgain, Rajendra P. and Reddy, D N (2016). Outmigration from Hill Region of Uttarakhand: Magnitude, Challenges and Policy Options, National Institute of Rural Development and Panchayat Raj, Hyderabad.

ECE 452 : Behavioural Economics

Course Objective

This course will introduce the fast-evolving field of behavioural economics. This area has evolved through an interaction between experimental results and the development of theory.

Course Learning Outcome

After completing this course, students would have learned the leading examples of departures in behaviour from that explained by earlier economic theory and the main models formulated to explain these departures

Unit I: Introduction

Behavioural economics and consumer behavior, new findings from evolutionary neuroscience, intuition, broadening psychology's reach, integrating emotions into economic theory, economic decision making- a behavioural perspective

Unit II: Behavioural Microeconomics

Heuristic and biases, Risk and Uncertainty, Inter-temporal decision making, bounded rationality, prospect theory, Behavioural game theory, Nudges, Policy, and Happiness

Unit III: Behavioural Macroeconomics

Neo-Keynesian Rational Expectation model, serial correlation in behavioural macroeconomic model- the sources of autocorrelation and the long lag in behavioural macroeconomic model
Animal Spirits and economic decisions, Introduction to behavioral finance

Unit IV: Economic Expectations, Emotions and Well being

Economic expectation, buying intention, consumer confidence, relation between attitude and behaviour, Emotions and utility functions, emotion and consumer choice- subjective wellbeing and income- poverty, unemployment and consumer satisfaction.

Text Books:

1. An Introduction to Behavioural Economics by Nick Wilkinson and Matthew Klaes.

Other References:

1. Bernheim, B.D., DellaVigna, S., Laibson, D.: Handbook of Behavioral Economics, Vol. 1, North-Holland (2018)
2. Dhami, S.: The Foundations of Behavioural Economic Analysis, Oxford University Press (2016)

ECE 453 : Economics of Education and Health

Course Objective

As a course in applied economics, it aims to introduce students to education and health as an important component of human development in the framework of economic theory. This course provides a microeconomic framework to analyze, among other things, individual choice in the demand for health and education, government intervention and aspects of inequity and discrimination in both sectors. It also gives an overview of health and education in India.

Course Learning Outcomes

CLO1: The students will learn the role of health and education in human development.

CLO2: 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.

CLO3: They will also learn to analyse the returns to education, its role in labour market signalling, and the progress of schooling in India.

CLO4: They will also be exposed to the theories of discrimination and inclusion

Unit 1: Role of health and education in human development: health and education outcomes and their relationship with macroeconomic performance

Unit 2: Theoretical 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; Evaluation of Health Programs (Costing cost effectiveness and cost-benefit analysis, burden of disease).

Unit 3: Health Sector in India: Health outcomes, health systems, health financing, public policy for health sector; rationale for government intervention in the health sector

Unit 4: Education: Investment in Human Capital; Rate of return to education: private and social; quality of education, signalling or human capital, theories of discrimination, gender and caste discrimination in India;

Unit 5: Education Sector in India: An Overview; Educational Development; Public expenditure on education; Access and inequality in quality of education

Readings:

1. William, Jack, Principles of Health Economics for Developing Countries, World Bank Institute Development Studies, 1999.
2. World Development Report, Investing in Health, The World Bank, 1993.
3. Ronald G, Ehrenberg and Robert S, Smith, Modern Labour Economics : Theory and public policy, Addison Wesley, 2005.
4. Health Economics by Bhattacharya, Hyde, Tu (2012)

Course Objectives

The course aims to provide students with a broad understanding of international trade and finance theories. It equips them with the tools to analyze trade flows, capital movement, exchange rates, and policy debates governing the global economy.

Course Learning Outcomes:

CLO1: Students understand theoretical foundations of international trade and how it impacts economic welfare.

CLO2: They will be able to evaluate tariffs, balance of payments, and the working of exchange rate systems.

CLO3: They will learn application of theoretical models—including the foreign trade multiplier and exchange rate theories—to understand how economies adjust to external imbalances

CLO4: Learners will understand how global integration and trade policies affect national economies.

Unit-I: Theories of International Trade

Theories of Absolute Advantage, Comparative Advantage and Opportunity Costs. Heckscher-Ohlin Theory of Trade, Factor Price Equalization Theorem, New Approaches to Trade Theory, New Theories of International Trade, Economic Growth and International Trade, Production Effects, Consumption Effects, Combined Production and Consumption Effects of Growth, Theory of Immiserising Growth, Prebisch-Singer Model

Unit-II: Terms of Trade

Concepts and Measurement of Terms of Trade, Factors Affecting Terms of Trade, The Effects of the Terms of Trade on a Nation's Welfare, Theory of Tariff, Partial Equilibrium Analysis of Tariff, General Equilibrium Analysis of a Tariff, Optimum Tariff and Retaliation

Unit-III: The Balance of Payments and Adjustment in BOP

Concepts and Components of Balance of Payments, Causes of Dis-equilibrium in the Balance of Payments, Measures to Correct BOP, Adjustment in BOP, The Process of Adjustment in the Balance of Payment under Gold Standard, Fixed Exchange Rate and Flexible Exchange Rates, Theories of Exchange Rate, Foreign Trade Multiplier

Unit-IV: Economic Integration

Custom Union and Free Trade Areas (Belt and Road Initiative Theory), Exchange Rate Determination, Theories of Exchange Rate Determination, Foreign Exchange Market, Contemporary Exchange Rate Systems, Foreign Exchange Transaction Forms, Foreign Exchange Arbitrage and Market Hedging

Recommended Books:

Text Books:

Dominick Salvatore: International Economics, 8/e, Wiley Publication

Bhagwati, J. (Ed.): International Trade, Selected Readings, Cambridge University Press

Reference Books:

Sodersten, B.: International Economics, The Macmillan Press Ltd., London

Cherunilam: International Economics, Tata McGraw Hill, 5th Edition

Chacholiades: International Trade, Theory and Policy, McGraw Hill

Deepak Nayyar: Trade and Industrialisation, Oxford University Press

ECE455: Game Theory

Course Objectives

This course is a survey of the main ideas and techniques of game-theoretic analysis related to bargaining, conflict, and negotiation. As such, the course emphasizes the identification and analysis of archetypal strategic situations frequently occurring in bargaining situations. The goals of the course are to provide students with a foundation to apply game-theoretic analysis, both formally and intuitively. Moreover, it develops capability to negotiation and bargaining situations and recognizes and assesses archetypal strategic situations in complicated negotiation settings.

Course Learning Outcomes

- Students learn foundation to apply game-theoretic analysis, both formally and intuitively.
- It develops their capability to negotiation and bargaining situations and recognizes and assesses archetypal strategic situations in complicated negotiation settings.

Unit-I Introduction: What is Game Theory? The Theory of Rational Choice, Coming Attractions: Interacting Decision-Makers; Nash Equilibrium: Theory, Strategic Games, Example: The Prisoner's Dilemma, Examples.

Unit-II: Games with Perfect Information: Nash Equilibrium, Studying Nash Equilibrium Experimentally, Examples of Nash Equilibrium, Experimental Evidence on the Prisoner's Dilemma, Focal Points, Best Response Functions, Dominated Actions, Equilibrium in a Single Population: Symmetric Games and Symmetric Equilibria.

Unit-III Mixed Strategy Equilibrium: Introduction, Some Evidence on Expected Payoff Functions, Strategic Games in which players may randomize, Mixed Strategy Nash Equilibrium, Dominated Actions, Pure Equilibria When Randomization is Allowed, Illustration: Expert Diagnosis, Equilibrium in a Single Population, Illustration: Reporting a Crime.

Unit-IV Extensive Games with Perfect Information: Theory, Extensive Games with Perfect Information, Strategies and Outcomes, Nash Equilibrium, Subgame Perfect Equilibrium, Finding Subgame Perfect Equilibria of Finite Horizon Games: Backward Induction, **Games with Imperfect Information:** Motivational Examples, General Definitions, Two Examples Concerning Information, Illustration: Cournot's Duopoly Game with Imperfect Information.

Recommended Books:**Text Books:**

- Martin J. Osborne (2012), an introduction to Game Theory, oxford, ISBN- 978086109
- Barron E N (2009), Game Theory an introduction, Willy student Edition, ISBN-10:9788126523191

ECE 459: Advanced Econometrics**Course Objective**

The course focuses on preparing students to learn the theoretical basis for various econometric techniques widely used in empirical research and consider their application in a wide range of problems

Course Learning Outcomes

After this course, students are able to:

- Review the basic econometric concepts
- Discover some advanced topics in model building
- Study the dynamic econometric models

Unit-I Review of Elementary Econometrics: Two variable and multiple variable linear regression model, Generalized least square, Problems of heteroscedasticity, autocorrelation and multicollinearity, Estimation of non-linear equations

Unit-II Regression with Qualitative Variables and Other Techniques: Dummy variable, Regression with dummy dependent variables, LPM, Logit, Probit and Tobit models

Unit-III Dynamic Econometric Model: Autoregressive and distributed lag models, Koyck's approach, partial adjustment and adaptive expectations model, instrumental variables, Error correlation mechanism

Unit-IV Applications of Single Equation Models: Application of single equation technique in demand analysis, Estimation of demand functions under different conditions, Estimation of consumption function, Cross section and time series, Estimation of Production functions: Cobb Douglas & C.E.S.

Recommended Books:**Text Books:**

1. Gujarati, D.N. (1995). *Basic Econometrics* (2nd Edn.). McGraw Hill, New Delhi.
2. Johnston, J. (1991). *Econometric Methods* (3rd Edn.). McGraw Hill, London.

Reference Books

1. Koutsoyiannis, A. (1977). *Theory of Econometrics* (2nd Edn.). The Macmillan Press Ltd., London.
2. Pindyek, R.S. and D.L. Rubinfeld (1976). *Econometric Models and Economic Forecasts*; McGraw

Semester- I

ECG 101 Foundations of Economics-I

Course Objective

This course covers some basic facets of Economics, namely, Microeconomics and teaches the fundamentals of microeconomics. It is designed to provide a foundation for economic analysis and a broad understanding of the economic issues at micro level.

Course Learning Outcomes

- ✓ Acquire basic knowledge and develop an understanding of the concepts and relationships of microeconomics.
- ✓ Comprehend, assess and analyze the microeconomic issues and problems of an economy.

UNIT-I Introduction

Problem of scarcity and choice: scarcity, choice and opportunity cost; production possibility frontier; economic systems.

Demand and Supply: law of Demand, Determinants of demand, shifts of demand versus movements along a demand curve, market demand, law of Supply, determinants of Supply, Shifts of Supply Vs Movements along a Supply curve, Market equilibrium.

Elasticity: price elasticity of demand, calculating elasticity, determinants of price elasticity, other elasticities.

UNIT-II Theory of Consumer Behavior

Concept of Utility, Diminishing Marginal Utility, Equi-marginal utility; Indifference curves, Budget constraint, Consumer's Equilibrium condition under Cardinal and Ordinal Approach.

UNIT-III Theory of Producer Behavior

Production function, law of Variable Proportions, Isoquant and Isocost lines, Producer's Equilibrium condition; Cost Analysis- costs in the short run, costs in the long run, Revenue Analysis- Concepts and Relationships.

UNIT-IV Market Mechanism

Perfect Competition, Monopoly and Monopolistic Competition- definitions, features and Price and Output determination under different market conditions.

Reference Book:

1. Salvatore, D *Principles of Microeconomics* (5th Edition) Oxford University Press, New Delhi
2. Koutsoyiannis, A. (1990) *Modern Microeconomics*, Macmillan Press Ltd., London
3. Sen, A. (1999) *Microeconomics Theory and Applications*, Oxford University Press, New Delhi
4. Varian, H. (2000) *Microeconomic Analysis*, W. W. Norton, New York

Semester- II

ECG 151 Foundations of Economics-II

Course Objective

This course introduces some basic facets of Economics, namely, Macroeconomics. It also covers the main concepts and theories which explain the aggregate behaviour of the economy.

Course Learning Outcome: After completion of this course, students will be able to

- ✓ Acquire basic knowledge and develop an understanding of the concepts and relationships of macroeconomics.
 - ✓ Comprehend, assess and analyze the macroeconomic issues and problems of an economy.
-

UNIT-I Introduction

What is Macroeconomics? Macroeconomic issues in an economy, National Income- Circular flow of Income and Concepts of GDP and GNP

UNIT-II National Income Accounting

Measurement of National income and related aggregates- Income; Value Added Method and Expenditure Method, Nominal and Real income, Aggregate Demand and Aggregate Supply

UNIT-III Determination of GDP

Consumption function- concepts of MPC, APC, Saving function- concepts of MPS, APS, and Investment Functions and Investment Multiplier, Determination of Equilibrium Income and Output- The Concept of Full Employment and unemployment

National Income Determination in an Open Economy with Government

Fiscal Policy: impact of changes in Government Expenditure and Taxes; Net exports function; Net exports and equilibrium national income.

UNIT-IV Money in a Modern Economy

Concept of Money in a modern economy; Demand for money; Quantity theory of money; liquidity preference and rate of interest; Money supply and Monetary policy. Inflation- Demand pull and Cost push inflation, Measures to control inflation.

Reference Books :

1. Mankiw, N.G. Macroeconomics (Worth) most recent edition
2. Ljungqvist and Sargent, Recursive Macroeconomic Theory, (2nd ed. MIT Press 2004)
3. Carl E. Walsh, Monetary Theory and Policy (3rd ed., MIT Press, 2010).

Semester - III

ECG202: Regional Development in Uttarakhand

Course Objectives

- To introduce students to the core concepts and theories of regional development.
- To familiarize them with the socio-economic and demographic profile of Uttarakhand
- To enable them to analyze the key developmental challenges and regional imbalances within the state.
- To provide an understanding of the policies and strategies aimed at fostering sustainable and inclusive growth in Uttarakhand.
- To enhance critical thinking about the unique issues facing Himalayan regions, such as ecological fragility and migration.

Course Learning Outcomes

Upon successful completion of this course, students will be able to:

- Define regional development and its importance, especially in the context of Indian hill states.
- Identify and compare the key economic, social, and demographic indicators of Uttarakhand.
- Analyze the causes and consequences of regional imbalances between hilly and plain districts and between Garhwal and Kumaon regions.
- Evaluate the role of various sectors, including tourism and hydropower, in the state's economy.
- Explain the main challenges related to employment, livelihoods, and migration in the state.
- Critically assess the effectiveness of key state and central government policies in promoting regional development.

Unit I — Regional Development: Meaning, Concepts and Importance

Meaning and scope of regional development; Importance in Indian federal context, with special reference to hill states; Theories and models: growth pole, cumulative causation, balanced vs. unbalanced growth; Indicators of regional development: economic, demographic, social, ecological; Relevance of Sustainable Development Goals (SDGs) for Himalayan regions

Unit II — Economic Profile of Uttarakhand

Trends in GSDP growth, Per capita income trends and comparison with all-India average; Sectoral structure: agriculture, industry, services, tourism & pilgrimage economy; Income inequality: inter-district and rural–urban differences; Regional imbalance: hilly vs. plain districts, Kumaon vs. Garhwal, district-wise disparities; Fiscal health, public expenditure patterns, investment trends; Ecological economy and concepts like Gross Environment Product (GEP)

Unit III — Demography and Human Development

Population growth by gender, age and demographic dividend; Vital indicators: fertility, mortality, sex ratio, literacy; Human Development Index (HDI), Gender Development Index (GDI), Multidimensional Poverty Index (MPI); Education: enrolment, dropout, literacy; Health: infrastructure, outcomes, nutrition, maternal and child health indicators

Unit IV — Employment, Unemployment and Regional Trends

Labour force participation (male–female, rural–urban); Employment structure in Uttarakhand: primary, secondary, tertiary sectors; Diversification in employment by region and gender; Role of merging sectors in employment: tourism, hydropower, MSMEs, IT services; Trends in unemployment and underemployment; Migration and its characteristics; Diversification in agriculture and its role in improving farm-based livelihoods

Unit V — Policies and Strategies for Regional Development

Role of state planning and development institutions in Uttarakhand; Key state policies: Tourism Policy 2023, Industrial Policy, Ecotourism initiatives, Employment Generation schemes; Major central schemes relevant to Uttarakhand: Rashtriya Gram Swaraj Abhiyan, National Rural Livelihood Mission, Samagra Shiksha Abhiyan, Ayushman Bharat and NHM, Pradhan Mantri Gram Sadak Yojana, Jal Jeevan Mission; State policies: Veer Chandra Singh Garhwali Paryatan Yojana; Palayan Niwaran Yojana; Disaster management and resilience strategies after the 2013 Kedarnath floods; Strengthening Panchayati Raj and decentralized governance for hill development

References

1. **Directorate of Economics & Statistics, Govt. of Uttarakhand.** (2024). *Economic Survey of Uttarakhand 2023–24*. Dehradun.
2. **Institute for Human Development (IHD) & Govt. of Uttarakhand.** (2019). *Uttarakhand Human Development Report*. New Delhi: IHD.
3. **National Institute of Rural Development and Panchayati Raj (NIRDPR).** (2017). *Out-migration from Hill Region of Uttarakhand*. Hyderabad: NIRDPR.
4. **Centre for Public Policy and Good Governance (CPPGG).** (2018). *State and District Indicator Frameworks (with UNDP support)*. Dehradun: CPPGG.

Other References

1. **Govt. of Uttarakhand, Dept. of Tourism.** (2023). *Uttarakhand Tourism Policy 2023*. Dehradun.
2. **National Institute of Disaster Management (NIDM).** (2013). *India Disaster Report 2013*. New Delhi: Ministry of Home Affairs.
3. **NITI Aayog.** (2024). *State Summary Report: Uttarakhand*. New Delhi.
4. **India Brand Equity Foundation (IBEF).** (2024). *Uttarakhand State Profile*. New Delhi

ECG 201: History of Indian Economic Thought

Course Objectives:

The purpose of this course is to develop understanding among the students about Indian Economic Thinking in ancient and pre-independence India.

This course exposes students to prominent Indian economic thinkers from the ancient period till the early 20th century. The course will provide intellectual underpinning of ancient Indian economics, which will help them solve many ongoing economic problems.

Course Learning Outcomes:

The students will be able to have idea about the ancient Indian economic system

The course will help the students to understand the current economic system in view of the economic history of the country

Unit 1: Ancient and pre-colonial period

Introduction to the study of the history of economic thought, Kautilya and his Arthashastra, Postulates of Ancient Indian Economics, Buddhism and economics

Unit 2: Colonialism, Exploitation and Economic development

Classical & Neoclassical economics and Indian economic thought during colonial period; Theory of wealth drain and famine and poverty; Industrialization, agrarian policy, infrastructure and structural changes.

Unit 3: Economic thought: Indian Freedom Movement

Gandhian Economic model of swadeshi; Gokhale and Economics of Education; free trade to discriminating protection; Ranade and Economics of development

Unit 4: Ambedkar's thought on population, agriculture, banking and industrialization, economic thought of C.N Vakil, V.K.R.V. Rao, D.R. Gadgil

Suggested Readings:

- Kangle, R. P. (1986). *Kautiliya Arthasastra (vol. No. 1-3)* Motilal Banarsidass Publication.
 - Bahadur, R. and Aiyanger, K.V.R. (1934). *Aspects of Indian Economic Thought*. The Madras Law Journal Press, Mylapore, Madras.
 - Dasgupta, A. (1993). *The history of Indian Economic Thought*. Routledge, London and New York.
 - Shah, K.T. (1954). *Ancient Foundations of Economics in India*. Vora & Co. Publishers Ltd. Bombay.
 - Mahadev Govind Ranade (2000). *Indian political Economy*. Indian economic association trust for research and development. Ch1.
 - J. Krishnamurty (ed.; 2011). *Towards Development Economics: Indian Contributions 1900–1945*, OUP.
 - Government of Maharashtra Education Department (1982). *On Measures for Birth Control'*
- Dr. Babasaheb Ambedkar: Writings and Speeches, Volume.-2, Appendix-1*
Government of
- Waldauer, C., Zahka, W. J., & Pal, S. (1996). *Kautilya's Arthashastra: A neglected precursor to classical economics*. *Indian Economic Review*, 101-108.
 - Tisdell, C. A. (2003). *A western perspective on Kautilya's' Arthasastra': Does it provide a basis for economic science?* (No. 1742-2016-140719, pp. 1-13).
 - Adams, J. (2006). *Economics, economists, and the Indian economy*. *India Review*, 5(1), 37-61.
 - Skare, M. (2013). *The missing link: From Kautilya's The Arthashastra to modern economics*. *Journal of Philosophical Economics*, 6(2), 2-31.
 - Deodhar, S. Y. (2018). *Indian antecedents to modern economic thought*.
 - Ambedkar, B. R. (1918). *Small holdings in India and their remedies*. *Journal of Indian Economic Society*, 1, 1900-1945.

Semester- IV

ECG 251 : Issues in Environmental Economics

This course is designed to enable students to recognize the important linkages between the environment and economics, be aware of the key environmental issues around the globe and understand approaches to identify and value costs and outcomes to include in economic evaluation of the environment through benefit cost analysis.

Unit-1 Economics of Environment and Environmental Valuation

Environmental Economics - Meaning and Significance - Interlinkage between Economy and Environment - Material Balance Model - Law of Entropy - Environmental Kuznets' Curve Environmental Valuation - Use Values, Non-use Values, Option Values - Approaches to Environmental Valuation - Direct Methods - Contingent Valuation Method, Trade off Games Method, Costless Choice Method, Delphi Method - Indirect Methods - Revealed Preference Methods - Travel Cost Method, Hedonic Pricing Method, Preventive Expenditure Method, Surrogate Market Cost Approach, Wage Differential Approach- Cost Based Methods and Other methods of Valuation Benefit Analysis.

Unit-2: Environmental Policies and Issues-

Environmental Externalities - Design of Environmental Policy Quantity Based Instruments Market based Instruments Pigouvian tax and Subsidy Approach Non-Market Instruments Command and Control - Mixed Instruments - Marketable permits - Tradeable Pollution Permits - Bargaining Solution - Coase Theorem - Informal Regulation - Collective Action - Grass Root Movements (Chipko Movement, Save Silent Valley Movement, Narmada Bachao Andolan, Appiko Movement) Monitoring and Enforcement - The New Model of Pollution Control - Major Environmental Policies and Legislations in India. Global Environmental Issues - Climate Change Problems, Global Warming, Bio Diversity Loss, Acid Rain, Deforestation, Environmental Pollution.

Unit-3 Economics of Natural Resource Management

Natural Resources - Resource Taxonomy - Theories of Optimum Use of Exhaustible and Renewable Resources - Common Property Resource Management - Tragedy of Commons.

Unit-4 Environment Development Trade off

Sustainable Development - Indicators of Sustainable Development - Equity and Sustainable

Development - Environment and Trade in the WTO Regime - Environment and System of National Accounts - Green GDP.

Reference Books:

1. M. Karpagam (1999); Environmental Economics, Sterling Publishers.
2. Hanley N., J.F. Shogern and B. White (1997), Environmental Economics in Theory and Practice, Macmillan.
3. Smith V. Kerry (1996), Estimating Economic values for Nature: Methods for Non Market Valuation, Edward Elgar, Cheltenham, UK Case Studies (India)
4. Hussen, A M (2005), Principles of Environmental Economics, Routledge, London & New York.
5. Eugene, T. (2004), "Environmental Economics" B.K. Offset Press, New Delhi.
6. Hanley, N. (1997), Environmental Economics in Theory and Practice, Macmillan, London.
7. Mitchell, R.C. and R.T. Carson (1993), Using Surveys to Value Public Goods: Resources for the Future, Washington, D.C.
8. Kolstad, D. Charles (2010), Environmental Economics, Oxford University Press.

9. Bhattacharya N. Rabindra (ed.) (2001); "Environmental Economics An Indian Perspective", Oxford University Press.
10. Eugene, T. (2004), "Environmental Economics" B.K. Offset Press, New Delhi.
11. Hanley N., J.F. Shogern and B. White (1997), Environmental Economics in Theory and Practice, Macmillan.
12. Hoel, M. (1997), 'International Coordination of Environmental Policies' in New Dimensions in the Economic Theory of Environment, Carrao Carlo and Domenico Siniscalco (Eds.), Cambridge University Press, Cambridge.
13. Larsen, B. and A. Shaw (1994), Global Tradable Carbon Permits, Participation Incentives, and Transfers, Oxford Economic Papers, Vol. 46.
14. Ostrom, E. (1990), Governing the Commons: The Evolution of Institutions for Collective Actions, Cambridge University Press, Cambridge
15. Karan P.P. (1994), "Environmental Movements in India", Geographical Review, American Geographical Society.
16. www.unep.org
17. Sankar, U (Ed.) (2001), Environmental Economics, Oxford University Press, New Delhi.
18. Bhattacharya; Environmental Economics-OUP, 2002.
19. M. Karpagam (1999); Environmental Economics, Sterling Publishers.
20. Rangarajan, Mahesh (Ed.) (2007); Environmental Issues in India A Reader, Pearson.
21. Kolstad, D. Charles (2010), Environmental Economics, Oxford University Press.
22. Hanley N., J.F. Shogern and B. White (1997), Environmental Economics in Theory and Practice, Macmillan.
23. Tom Tietenberg- Environmental and Natural Resource Economics- Addison Wesley publishers- seventh edition
24. David Anderson, Environmental Economics and Natural resource management- Routledge publishers- fourth edition
25. David W Pearce, R Kerry Turner-Economics of Natural Resources and Environment- John Hopkins University Press
26. John Blewitt- Understanding Sustainable Development- Earth scan publishers
27. Michael D Kaplowitz- Property rights, Economics and Environment- Volume 5- Routledge publishers

In the contemporary world with globalization and liberalization more and more attention is being given to industry. This course intends to provide knowledge to the students on the basic issues such as productivity, efficiency, capacity utilization and debates involved in the industrial development of India. The objective is to provide a thorough knowledge about the economics of industry in a cogent and analytical manner, particularly in the Indian context.

Unit-1:

The Scope of Industrial Economics and Its History, Concepts and Measurement, The Organizational Form and Alternative Motives, The Elements of Market Structure Market Conduct

Unit-2:

Demand Analysis, The Cost Theory and Optimum Size of the Firm, Market Concentration, Diversification Vertical Integration and Merger, The Analysis of Financial Ratios and Relationships

Unit-3:

Investment Decisions, Advertising Strategy, Pricing Decisions, The Growth of the Firm, Industrial Location Analysis, Government Regulation of Industry, Labour Productivity

Unit-4:

Market Structure and Innovation, The Determinants of Profitability, Industrial Finance and Accounting

Text Books:

Barthwal (2007). Industrial economics: An introductory Text Book. New Age International

Barthwal, R. R. (1985), Industrial Economics, Wiley Eastern Ltd., New Delhi.

Reference Books:

PERLOFF, J. – CARLTON, D. Modern Industrial Organization (4th Edition) Boston Pearson Education Limited. 2015 978-1-292-08785-6

PEPALL, L. – RICHARDS, D J. – NORMAN, G..Industrial organization: theory and practice Boston Pearson Addison Wesley 978-0-321-37610-7

Semester- V

ECG 301 : Globalization and Development

Course Learning Outcome:

- At the end of the course, students will be able to understand the globalization and its impact on development and environment. Students will explore the different aspects of the on-going debates on the impact of trade on environment, climate change, growth, and development. Students will also understand the impact of globalization and liberalization policies on India's economic development.

Unit-I Introduction to Globalisation: Concept and definition, Evolution, objectives, reasons for globalization; dimensions and features; Advantages and disadvantages; gainers and losers of globalization

Unit-II Trade and Development: Globalization vs Development Debate; Trade and Poverty; Trade and Inequality; Economics of Fair Trade; Trade liberalization and WTO; Globalization and India's Economic Development. Foreign Direct Investment and its composition

Unit-III Trade and Environment: Globalization vs Environment Debate; Scale, Composition and Technology Effects; Trade and Environmental Regulations (PHH, Porter Hypothesis, etc); Environment and Agreements (WTO & RTAs)

Unit-IV Trade Policy: Regional and Multilateral Trade Agreements (including WTO); Import Tariffs and Dumping; Import Quotas and Export Subsidies; Trade Policy-Instruments of Trade Policy, Political Economy of Trade, Trade Policy in Developing Countries; International Macroeconomics and Economic Integration, National Income Accounting and Balance of Payments, Types of Exchange Rate Regimes, Degrees of Economic Integration.

Recommended Books and Papers:

1. Krugman, P., Obstfeld, M., and Melitz, M. International Economics: Theory and Policy. Addison Wesley, 2014.
2. Bhagawathi Jagadish (2004) In Defence of Globalisation, Oxford University Press New Delhi.
3. Hoekman, Bernard and Michael Kostecki. (2001) The Political Economy of the World Trading System: WTO and Beyond. Oxford University Press
4. Feenstra, R (2016), Advanced International Trade: Theory and Evidence, 2nd Edition, Princeton University Press
5. Hoekman, Bernard and Michael Kostecki. (2001) The Political Economy of the World Trading System: WTO and Beyond. Oxford University Press
6. Topalova (2007) "Trade Liberalization, Poverty, and Inequality Evidence from Indian Districts"
<http://www.nber.org/chapters/c0110.pdf>

Semester - VI

ECG 352 : Poverty and Inequality

Course Learning Outcome:

On completion of this course, the students will be able to:-

- develop a understanding of recent historical trends in terms of thinking about poverty and its causes and how that thinking influences policy making.

Unit-I Introduction: Meaning, concept, Measurement; Empirical Observation, Impact of Poverty; Studies of Poverty in India; Planning Commission's Estimate of Poverty; NSSO 55 th Round & Poverty Reduction Controversy; Economic Reforms & Reduction of Poverty; Need for Redefining Poverty Line.

Unit-II International Comparison of Poverty; Solutions of the problem of Poverty, Empirical Evidences through various case studies.

Unit-III Poverty & Trickle Down in Rural Sector; Safety needs for Poor: Poverty Alleviation Programmes; Meaning and Measurement of economic inequality; Income Inequality: Inverted U hypothesis, uneven and compensatory changes; Inequality and demand composition; Inequality, capital market and development, human capital and development.

Unit-IV Growth and Inequality; Growth of large scale industries; Growth of Monopolies and Concentration of economic power in India; India as an Economic Super Power.

Reference Books:

1. Ray, Debraj (1998), Development Economics, Princeton University Press
2. Mishra Puri, "Indian Economy, 29 th ed., Himalaya publishing House
3. Datt & Sundharam, "Indian Economy, 68 th revised edition S.Chand
4. Amartya Sen, "Poor relatively Speaking" Oxford Economic Papers 2 (35) July 1983, 153- 169.
5. Commentaries (rejoinders) 2005. Measurement vol 3(4)
6. J. Iceland and K Bauman 2004. Income Poverty and Material Hardship: How strong is the Association? National Centre for Poverty working paper.<http://nationalpovertycenter.com/publications/workingpaper04/paper17/04-17.pdf>
7. Iceland, John (2003). Poverty in America: A Handbook – 2nd Edition, Chapter 1, and 3: 1- 37 (Chapter 2 optional, but provides interesting historical context).
8. Blank, Rebecca. (2007). "Presidential Address: How to Improve Poverty Measurement in the United States." Journal of Policy Analysis and Management. Volume 27, Issue 2, Spring 2008: 233-254.
9. Bipartisan Call for New Federal Poverty Measure. New York times, September 01, 2008

ECG351 Human Development

Course Objective

This course aims to develop an understanding of human development beyond income-based measures like GDP, emphasizing well-being, equity, and quality of life. It introduces the capability approach of Amartya Sen and the human development framework of the United Nations Development Programme. Students will learn to analyze and interpret key indices such as HDI, IHDI, GDI, GII, and MPI. The course also examines critical dimensions like health, education, inequality, and social exclusion, and evaluates public policies and contemporary challenges in India, including regional disparities, digital divide, migration, and climate change.

Course Learning Outcomes

- Enables students to understand human development beyond income measures.
- Helps analyse inequality, poverty, health, and education in development.
- Allows evaluation of public policy and development strategies.

Unit-I Conceptual Foundations of Human Development: Growth vs Development; Limitations of GDP; Capability Approach; Human Development Paradigm; Functionings vs Capabilities; Freedom and Agency.

Unit-II Measurement of Human Development: Human Development Index (HDI): construction and limitations; Inequality-adjusted HDI (IHDI); Gender Development Index (GDI) and Gender Inequality Index (GII); Multidimensional Poverty Index (MPI); Comparison with GDP.

Unit-III Dimensions of Human Development: Human capital vs human development; Health and nutrition; Education and skill formation; Market failures; Inequality and poverty; Gender inequality and social exclusion.

Unit-IV Human Development in India and Contemporary Issues: Trends in India; Regional disparities; Public policy (MGNREGA/VB-G RAM G, PDS, Health Mission, Education); Gig economy; Digital divide; Migration; Climate change and SDGs.

Recommended Books:

1. Amartya Sen – Development as Freedom.
2. UNDP – Human Development Reports.
3. Deneulin & Shahani – Introduction to Human Development.
4. Uma Kapila – Indian Economy.
5. Economic Survey of India.

6.

ECG451: Economics of Inclusion

Course Objective

To introduce students to economic analysis of discrimination and affirmative action. Also to bring out the effect of affirmative action (good and bad) on the society leading to reverse discrimination.

Course Learning Outcome

- ✓ Understand and explain economic theories of discrimination, including labour market behaviour, wage determination, and political economy perspectives.
- ✓ Analyse and measure discrimination using empirical evidence and case studies, and examine its linkages with poverty and public policy interventions.
- ✓ Evaluate policies of equal opportunity and affirmative action, including their economic implications and issues of reverse discrimination.

Unit-I Economics Theories of Discrimination: Basic concepts in economics (micro), Basic concepts in labour economics., Neo classical theories of discrimination, Basic theories of political economy, Theories of work & wage.

Unit-II Finding evidences of discrimination Quantifying discrimination (Case Studies)

Unit-III Links b/w discrimination, poverty and public policy, Anti poverty programmes of the government and pre-discrimination, legislation of government.

Unit-IV Equal Opportunity & its Economic Implications, Affirmative Action & Reverse Discrimination.

Recommended Books:

1. B.R.Schiller.(2007).The economics of poverty and discrimination, 10thEdition
2. R.Alebelda, Robert Drago Steven shulma (Economic Affairs Bureau) unlevel playing fieldsunderstanding equality and discrimination (2nd edition)
3. D.Nesia,Discrimination with reason, Oxford University press 1997.
4. Amartya Sen, On economic Inequality clarendon press 1997.

5. DEMOGRAPHY

6. Course Objectives:

7. The purpose of this course is to develop understanding among the students about the various demographic concepts and to explain the nature and scope of Demography. The course explains evaluation and adjustments in age data using different indices.

8.

9. Learning Outcomes:

10. After successful completion of this course, students will be able to understand the various components of Demography, sources of demographic data collection and errors therein. Comprehend population potential, density and concentration.

11.

12. Unit-I

13. Demographic Concepts and Definitions: Population, Nuptiality, Fertility, Morbidity, Mortality, Health Status, Migration, Urbanization; Basic Measures: Cohort, Period, Mid-Year Population; Nature and Scope of Demography; Its Relationship with Other Disciplines; Social Psychological concepts and its relevance to Demography; Components of Population Change and Balancing Equation; Dalton's formula.

14.

15. Unit-II

16. Basic Theories of Population: Malthusian, Marxian, Optimum Population Theory; Biological Theories of Herbert Spencer & Corrado Ginnis; Diet Principle: Thomas Doubleday and Density Principle: Thomas Sadler; Demographic Transition: Concept, Theory and Different Stages.

17.

18. Unit-III

19. Historical demography: Meaning, Scope, and Importance; Difference between History of Demography, Demographic History and Historical Demography; Limitations of Research in Historical Demography. Development of historical demography (Europe and Asia)

20.

21. Unit-IV

22. Population Composition and Characteristics: Age-Sex Structure (Pyramid), Sex Ratio, Sex Ratio at Birth, Marital Status, Rural-Urban Distribution; Occupation, Education, Religion and Caste Composition; Age-Sex Structures of Population in Developed and Developing Countries; Importance of Age-Sex Structure in Population Dynamics and its relevance; Factors Affecting Sex Ratio of the Population.

23.

24. Unit-V

25. History of Demographic Data: Major sources of data about the population in the past; Global Population Trends-Past, Present and Future Trends across the World and Developed/Developing Countries; History of Population Growth in India; Current Population Scenario and Demographic Profile of India and States; Major's Tribe in India.

26.

27. Suggested Readings:

28. Ashish (2001), Population of India: 2001 Census Results and Methodology, B. R. Publishing Corporation, Delhi.

29. Agarwala, S. N. (1981), India`s Population Problems, Tata McGraw Hill, New Delhi.
- Bhende, A. and T. Kanitkar (2019), Principles of Population Studies, Himalaya Publishing House, Mumbai.
- Bloom, D.E.,
30. D. Canning, et.al. (2002): The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change.
31. Santa Monica, CA, RAND Bogue, Donald J. (1969), Principles of Demography, John Wiley and Sons Inc., New York.
32. Bose, Heslop A (1999), Ageing and Development, Social Development Working Paper: 3, Help Age International.
33. Mason, A. (2007), “Demographic Dividends: The Past, the Present, and the Future”, in A. Mason and M. Yamaguchi (eds.), Population Change, Labor Markets and Sustainable Growth: Towards a New Economic Paradigm, Emerald Publishing Limited, Bingley.
- Maharatna, Arup (1996). Demography of Famines: An Indian Historical Perspective, Delhi, 1996.
34. Prskawetz, Bloom, and Lutz, eds., (2008), Population Aging, Human Capital Accumulation, and Productivity Growth, A Supplement to Population and Development Review.
35. Shrivastava, O. S. (1983), A Text Book of Demography, Vikas Publishing House Pvt. Ltd., Delhi.
36. Shryock, Henry S., Jacob S. Siegel and Associates (1976), The Methods and Materials of Demography, Academic Press, Inc., California.
37. Tim Dyson (ed.), India`s Historical Demography: Studies in Famine, Disease and Society, London, Curzon, 1989.
38. United Nations (1973), The Determinants and Consequences of Population Trends, Vol. I, Department of Economic and Social Affairs, New York.
39. Weeks, John R. (2015), Population: An Introduction to Concepts and Issues, Wadsworth Publishing Company, California.
40. World Health Organization (2015), WHO Report on Ageing and Health, WHO, Geneva.
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- 43.