

Doon University

(Department of Economics)

CURRICULUM AND DETAILED SYLLABUS

(Choice Based Credit System- CBCS)

(With effect from 2021-22)

MA (Economics)-Two Years

MSc (Economics)- Five Years Integrated

PhD (Economics)



Kedarpur, P.O. Ajabpur,

Dehradun-248001

Economics Course Curriculum and Credit Structure

(With effect from Academic Year 2021-22)

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;
- (c) 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.

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, Elective courses and General 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.

- The programmes shall include mandatory Core courses towards 'major' and supporting courses, Electives, General and Remedial courses. Prescribed number of credits towards a 'minor' is taken by the student in an area of study other than that for the major.
- The minimum and maximum course/credit load in a semester for each of the academic programmes in the University shall be prescribed by the Academic Council.
- The student failing in a course shall have to repeat the course.

For MA programme, from the second year onwards (that is from Semester-III), the theory papers would be reduced and the students would be assigned a thesis. The thesis would be distributed between the third and fourth semester as four credits and sixteen credits respectively. Thesis I will cover basic topics on Research Methodology followed by submission of Synopsis at the end of the Semester.

Also, it is proposed that the University may take recourse to Module teaching. Modules could be concentrated (say) in three weeks, three hours per day.

Credit Structure

The Department follows a Choice Based 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.***

The minimum credit requirements for award of MA and MSc degree programmes is given below:

Programme	Credit Requirement Courses				Total credits
	Core Courses	DSE	AE/SE/GE	Thesis/Project work	
MA (Two Years)	40	24	6	8	78
MSc (Five Year Integrated)	126	48	32	8	214
PhD		-	-		

Class Attendance

- The minimum class attendance required for appearing in the Semester Final 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 the Advisor and the Dean concerned under conditions prescribed by the Academic Council for the Purpose.
- Students falling short of attendance in a Course shall fail in the Course irrespective of the Marks obtained at the end of the Semester.

Conduct of Semester Examination

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

- (a) **MID-TERM EXAMINATION** with the weightage of **30 marks (Theory)**.
- (b) **SEMESTER FINAL EXAMINATION** with a final weightage of **50 Marks (Theory)** for courses without practical component. In courses with practicals the weightage shall be **30 Marks (Theory) + 20 Marks (Practical)**. **20 Marks will be distributed between 15 Marks laboratory work + 5 Marks viva.**
- (c) **Internal Assessment of 20 Marks** will be distributed by the course teachers based on class performances, class assignments, class tests, quizzes and seminars viva.
- (d) The evaluation of **Thesis work**, in case of Post-graduate students there shall be no written Examination. The evaluation shall be made out of 100 marks distributed between
 - **Internal Assessment** which include synopsis, research work and presentation made during the Semester will be evaluated out of **20 marks**
 - **Dissertation** will be evaluated out of **80 Marks**
- (e) Students missing the **MID-TERM EXAMINATION** of any course for reasons like serious illness (to be certified by an authorized Medical Practitioner), demise of a parent, one's own marriage or any other reason considered valid by the Academic Council may be allowed a **Make-up Examination** by the Vice-Chancellor to be taken during the last week of the Semester **just before the commencement of FINAL SEMESTER EXAMINATION**. Such an examination shall cover the course of the Subject(s) completed up to Final Semester Examination.

ASSESSMENT/ EVALUATION OF ACADEMIC PERFORMANCE

A student's performance is measured by the number of Credits that he/she has completed satisfactorily. A minimum number of Credits and Grade Points are required to be obtained for the student to continue in the Programme.

The performance of students will be assessed at the end of each Semester and Semester Grade Points (SGPA) awarded. After completing both the Semesters the Cumulative Grade Point Average (CGPA) will be calculated. The details for evaluation and minimum credit requirement for Masters' Programmes are given below.

Evaluation and Grade Point Requirements for Master's Programme

- (i) The grading of student performance shall be done on a 10-point grading scale.
- (ii) The Instructor(s) shall examine/ evaluate the performance of the students in each course in a manner as prescribed by awarding the marks.
- (iii) The total marks obtained in a course at the end of the semester out of 100 shall be converted into Grades

Academic Performance	Grade	Points	Marks obtained out of 10
Outstanding	A+	10	90 – 100
Excellent	A	9	80 – less than 90
Very Good	B+	8	70 - less than 80
Good	B	7	60 - less than 70
Fair	C	6	50 - less than 60
Pass	D	5	40 - less than 50
Poor	E	3	30 – less than 40
Fail	F	1	Less than 30 or attendance below 85%

M.A Program-Courses and Credit Structure (CBCS)

L- Lectures P-Practical T-Tutorial

AE- Ability Enhancement, GE- Generic Elective, SE- Skill Enhancement, DSE-Discipline Specific Elective

First Year						
First Semester						
Course code	Core Courses	AE/GE/SE/DSE	L	T	P	Credit
SSE 510	Microeconomics-I		3	1	-	4
SSE 511	Mathematical Methods		3	1	-	4
SSE 512	Statistical Methods		3	1	-	4
SSE 531	Macroeconomics-I		3	1	-	4
SSEI-AE 01		Seminar-I			1	1
SSEI-SE 01		Programming with R			2	2
Second Semester						
SSE 513	Development Economics		3	1	-	4
SSE 530	Microeconomics-II		3	1	-	4
SSE 532	Econometrics		3	1	-	4
SSE 610	Macroeconomics-II		3	1	-	4
SSE 661	Research Methodology		3	1	-	4
SSEI-AE 02		Seminar-II			1	1
Second Year						
Third Semester						
Course code	Core Courses	AE/GE/SE/DSE	L	T	P	Credit
SSE 533	Environmental Economics	-	3	1	-	4
		Elective I	3	1	-	4
		Elective II	3	1	-	4
		Field Survey			2	2
SSEI-AE 03		Seminar-III			1	1
Fourth Semester						
		Elective III	3	1	-	4
		Elective IV	3	1	-	4
		Elective-V	3	1	-	4
		Elective VI – MOOC	3	1	-	4
SSE 690		Dissertation			6	6
SSEI-AE 04		Seminar-IV			1	1
Total Credits (Two Years)						78

MSc Integrated Program- Course and Credit Structure (CBCS)

L- Lectures P-Practical T-Tutorial

AE- Ability Enhancement, GE- Generic Elective, SE- Skill Enhancement, DSE-Discipline Specific Elective

First Year						
First Semester						
Course code	Core Courses	AE/GE/SE/DSE	L	T	P	Credit
SSEI 110	Foundations of Microeconomics-I		5	1	-	6
SSEI 111	Foundations of Macroeconomics-I		5	1	-	6
SSEI 112	Mathematics-I		5	1	-	6
SSEI-AE 01		English Language, Literature & Application	2	-	-	2
SSEI-GE-01		Generic Elective-I	3	1	-	4
Second Semester						
SSEI 150	Foundations of Microeconomics-II		5	1	-	6
SSEI 151	Foundations of Macroeconomics-II		5	1	-	6
SSEI 152	Mathematics-II		5	1	-	6
SSEI-AE 02		Environmental Studies	2	-	-	2
		Generic Elective-I	3	1	-	4
Second Year						
Third Semester						
SSEI 211	Statistics-I		5	1	-	6
SSEI 312	Development Economics-I		5	1	-	6
SSEI 313	Environmental Economics		5	1	-	6
SSEI-SE 01		Basics of Computer Application -I	2	-	-	2
		Generic Elective-III	3	1	-	4
Fourth Semester						
SSEI 220	Statistics-II		5	1	-	6
SSEI 221	Development Economics-II		5	1	-	6
SSEI 222	Indian Economy		5	1	-	6
		Generic Elective-IV	3	1	-	4

Third Year						
Fifth Semester						
Course Code	Core Courses	General /Elective	L	T	P	Credit
SSEI 310	Econometrics-I		5	1	-	6
SSEI 311	International Economics		5	1	-	6
SSEI-SE 02		Software Package	2	-	-	2
		Discipline Specific Elective -I (Group I)	5	1	-	6
		Discipline Specific Elective-II (Group I)	5	1	-	6
SSEI-SE 03		Internship	2	-	-	2
Sixth Semester						
SSEI 321	Econometrics-II		5	1	-	6
		Discipline Specific Elective -III	5	1	-	6
		Discipline Specific Elective-IV	5	1	-	6
(A) Total Credits (Three Years) 140						
Fourth Year						
Seventh Semester						
Course code	Core Courses	General/Elective	L	T	P	Credit
SSEI 410	Advanced Microeconomics		3	1	-	4
SSEI 411	Advanced Econometrics		3	1	-	4
SSEI 412	Mathematics for Economists		3	1	-	4
SSEI 413	Advanced Statistics for Economics		3	1	-	4
SSEI-AE 01		Seminar-I	-	-	1	1
SSEI-SE 04		Programming with R	-	-	2	2
Eighth Semester						
SSEI 420	Advanced Macroeconomics		3	1	-	4
SSEI 421	Operational Research		3	1	-	4
SSEI 422	Public Economics		3	1	-	4
SSEI 423	Research Methodology		3	1	-	4
SSEI-AE 02		Seminar-II	-	-	1	1

Fifth Year						
Ninth Semester						
Course code	Core Courses	General/Elective	L	T	P	Credit
		Discipline Specific Elective -V	3	1	-	4
		Discipline Specific Elective -VI	3	1	-	4
		Discipline Specific Elective -VII	3	1	-	4
SSEI 510	Indian Economic Development and Policy		3	1	-	4
		Field Survey			2	2
SSEI-AE 03		Seminar-III			1	1
Tenth Semester						
		Discipline Specific Elective -VIII	3	1	-	4
		Discipline Specific Elective -IX	3	1	-	4
		Discipline Specific Elective X – MOOC	3	1	-	4
SSEI- 520		Dissertation			6	6
SSEI-AE 04		Seminar-IV			1	1
(B) Total Credits (Two years)						74
(C=A+B)Grand Total Credits (Five years) 140+ 74=						214 Credits

List of Discipline-Specific Electives (UG)

- SSEI-DSE-01 Network Economics
- SSEI-DSE-02 Labour Economics
- SSEI-DSE-03 Agricultural Economics
- SSEI-DSE-04 Public Economics
- SSEI-DSE-05 Political Economy –I
- SSEI-DSE-06 Political Economy –II
- SSEI-DSE-07 Banking and Monetary Economics
- SSEI-DSE-08 Economics of Discrimination
- SSEI-DSE-09 Basics of Economic Psychology

Generic Electives (GE)

- SSEI-GE-01 Microeconomics-I
- SSEI-GE-02 Macroeconomics-I
- SSEI-GE-03 Regional Development with special reference to Uttarakhand
- SSEI-GE-04 Sustainable Development
- SSEI-GE-05 Poverty and Inequality
- SSEI-GE-06 Gender Economics
- SSEI-GE-07 Economics of Education and Health
- SSEI-GE-08 Economic History

List of Discipline-Specific Elective Courses for PG

MSc Semester 9/ MA Semester III

- SSEI-DSE-10 Monetary Theory and Policy
- SSEI-DSE-11 Public Policy-Theory of Institutions
- SSEI-DSE-12 Globalization and Development
- SSEI-DSE-13 Demography
- SSEI-DSE-14 Informal Sector and Economic Development

MSc Semester 10/MA Semester IV

- SSEI-DSE-15 Public Policy-Theory and Practices
- SSEI-DSE-16 Economics of Discrimination
- SSEI-DSE-17 Health Economics
- SSEI-DSE-18 Network Economics
- SSEI-DSE-19 Regional Economy of Himalayan States
- SSEI-DSE-20 Game Theory
- SSEI-DSE-21 Behavioural Economic

Detailed Syllabus: Core Courses (MA Two Years)

First Semester

SSE-510 Microeconomics-I

Course Outcome:

- This course provides a broad understanding about the behaviour of an economics agent, namely, a consumer, a producer a factor owner, and price determination in the market.
- The approach of this paper is to study the behaviour of a unit and analysis is generally static and in a partial equilibrium framework.

Unit-I Elasticity and its Applications: Minimum Support Price and Minimum Wage Legislation; **Various Approaches to Consumer behaviour:** Cardinal approach, Ordinal approach-Hicks Vs Slutsky methods and Applications, Revealed Preference Hypothesis- Weak and Strong Axioms, **Recent Development in the Theory of Consumer Behaviour-** Understanding through Stock Adjustment Principle, Habit Creation Principle; R-Stone Principle

Unit-II Production Analysis: Traditional and Modern Approach: Production Function, Returns to Factor and Scale; Topics in Production Function- Homogeneity & Examples-Cobb-Douglas & CES production function- Derivation of properties, **Cost Analysis:** Traditional Approach Vs Modern Approach-Some Typical Cost curves, Excess capacity Vs Reserved capacity

Unit-III Marginal analysis as an approach to price and output determination: Market Power-Competition, Monopoly and Price Discrimination- price-output determination under discriminating monopoly, Monopolistic Competition- General & Chamberlin approaches to group with product differentiation and selling costs-Variou Models with free entry, price adjustment mechanism and both

Unit-IV Oligopoly: Collusive and Non-Collusive Oligopolies: Market-sharing Cartels and Price Leadership & Price determination, Cournot Model, Bertrand Model, Edgeworth Model, Chamberlin Model and Sweezy Model and further modification- Stackelberg Model

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

SSE-511: Mathematical Methods

Course Outcome:

- 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.

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

SSE-512: Statistical Methods

Course Outcome:

- The main objective of this paper is to train the students to use the techniques of statistics, which are commonly applied to understand and analyze economic problems.
- The paper assumes the learner to be acquainted with basic knowledge of Measures of Central Tendency, Dispersion and Association of Variables and further extends the knowledge to Theory of Probability and Sampling Distribution.
- It also deals with analysis of data and drawing inferences about various statistical hypotheses.

Unit-I Theory of Probability: Axiomatic definition and derivation of basic probability rules-conditional probability, Baye,s Theorem, Random variable, Mathematical expectation and moments, standard probability distributions: Binomial, Poisson and Normal, Central limit Theorem

Unit-II Sampling and Sampling Distribution: Types of sampling, parameter and statistic, tests of significance, null hypothesis, errors in sampling, critical region and level of significance, tests of significance for large samples, sampling of attributes and sampling of variables, Chi-square, students t, F and Z tests

Unit-III Statistical Inference: Theory of estimation- characteristics of estimators, consistency, un-biasedness, efficient estimator, methods of estimation-least square and maximum likelihood, method of minimum variance and method of moments, Statistical Hypothesis- tests of statistical hypothesis, steps in solving testing of hypothesis problem

Unit-IV Correlation and Regression: Karl Pearson Coefficient of Correlation, Rank Correlation, Lines of regression, regression coefficients standard error of estimates, Partial and multiple correlations, coefficient of determination

Recommended Books:

Text Books:

1. Fundamentals of Mathematical Statistics- S.C. Gupta, 2012
2. An Introduction to Mathematical Statistics and its Applications- Larsen Richard J, prentice Hall, 2012

SSE- 531: Macroeconomics-I

Course Outcome:

- The purpose of teaching 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.

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

Second Semester

SSE 513 Development Economics

Course Outcome:

The study of economic development has gained importance because of sustained interest of the developing countries in uplifting their economic conditions by restructuring their economies to acquire greater diversity, efficiency and equity in consonance with their priorities. While few success stories can be counted, many have grappled with chronic problems of narrow economic base, inefficiency and low standard of living. For this and other reasons, there have been many approaches to economic development.

- The topics incorporated in this paper are devoted to the explore the theories of growth and development, social & institutional aspects of development and understand the interdependence of the two major sectors.

Unit-I Introduction- Concept, History, Schools of Thought: An Introduction to Economic Development, Growth v/s Development, Stages in Economic Growth: Markshian Stages, Rostow's Stages, Growth Theories in the paradigm of convergence and non-convergence, Issues in convergence, A broad discussion on the paradigms of non-convergence, Harrod-Domar growth model, Solow Growth model, technical progress. History, expectations and development, State Market and Decentralization.

Unit-II Population and Development: Basic concepts, Demographic transition, Effects of population growth, Effects of population growth, Rural Urban interaction, Lewis Model, Harris Todaro Model, Government Policies

Unit-III Poverty and Inequality: Poverty-Concept and measurement, empirical observations, impact, Inequality: 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 Agriculture-land, labor, credit, insurance and their inter-linking: Markets in Agriculture, land rental contracts and ownership, Principal Agent theory and applications, Modeling labour issues, Analysis of credit markets, Theory of perfect insurance.

Recommended Books:

Text Book:

1. Ray, Debraj (1998), Development Economics, Princeton University Press

Reference Books:

1. Mookherjee, Dilip and Debraj Ray (2000): Introduction to Readings in the Theory of Economic Development, London: Blackwell.
2. Basu, K. : Analytical Development Economics: The Less Developed Economy Revisited. (Cambridge: MIT Press)
3. Thirlwall, A.P. : Growth, and Development with Special Reference to Developing Economies. Basingstoke, Palgrave Macmillan
4. Todaro, M.P. and S.C. Smith: Economic Development. London: Pearson
5. Weeks, John R. (2005): Population- An Introduction to Concepts and Issues. 10th edition

SSE-530: Microeconomics –II

Course Outcome:

- This course provides a broad understanding about the behaviour of economic agents namely, a consumer, a producer, a factor owner, and price determination in the market.
- The approach of this paper is to study the behaviour of a unit and analysis is generally static and in a partial equilibrium framework.

Unit-I Managerial Theory of the Firm: Managerial Theory of the Firm-Boumol's theory of sales revenue, Maximisation, Marris's model of the managerial enterprise and Williamson's model of managerial discretion
Risk and Uncertainty-Decision making under risk and uncertainty

Unit-II Theories of Distribution: Neo-classical approach - marginal productivity theory; Some additional topics on factor pricing and Income distribution-The Adding-up problem: 'Product Exhaustion' Theorems-Euler's Theorem & Clark-Wicksteed-Walras Theorem

Macro Theory of Distribution-Ricardo, Marx Theory, Kalecki theory and Kaldor theory

Unit-III Theory of General Equilibrium and Welfare Economics: General equilibrium – The Walrasian System; New Welfare Economics – Pareto Optimality Criterion; Kaldor-Hicks-'Compensation criterion'; Bergson criterion-'Social welfare function'

Unit-IV Advanced Welfare Economics: Market failure-Monopoly power, Externalities in production and consumption, Public goods-Private goods, Asymmetric Information; The Theory of Second Best

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

SSE 532 Econometrics

Course Outcome:

This is an introductory course to Econometric theory. The learner will be able to

- Construct econometric models
- Apply regression models to study economic problems
- Study the consequences of the violation of important least square assumptions,
- Learn the important concepts in time series analysis and the identification problem.

Unit-I Classical Linear Regression: General Linear regression Model, Least square assumptions, OLS estimators and their properties, Two variable, multiple variable regression model, Co-efficient of Determination, Hypothesis testing

Unit-II Further topics in Linear Regression: Consequences of omission of relevant regressors and inclusion of irrelevant regressors, Violation of least square assumptions- Autocorrelation, Heteroscedasticity and Multicollinearity, nature, detection, consequences and remedies, dummy variable trap

Unit-III Introduction to Time Series Econometrics: Idea of stochastic time series, Stationary and non-stationary, Simple Random Walk, Random Walk with drift, Unit root, Dickey Fuller Tests- spurious regression, Integrated series and simple Cointegration

Unit-IV Introduction to Simultaneous Equation Model: Structural and Reduced forms, the Simultaneous Equation bias The Identification Problem; Rules of Identification-Order and Rank Condition, Indirect Least Square and Two-stage least square

Recommended Books:

Text Books:

1. Gujarati, D.N., Basis Econometrics, McGraw Hill, New Delhi.
2. Johnson I., Econometrics Methods, MC Graw Hill Book Co. London.

SSE- 610: Macroeconomics-II

Course Outcome:

- The purpose of teaching 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.

Unit-I Behavioral Foundation In Macroeconomics: Consumption and theories of consumption .—Keynes consumption function showing Absolute Income Hypothesis, Relative Income Hypothesis, Life Cycle Hypothesis and Permanent Income Hypothesis and Fisher,s Inter-temporal Substitution of Consumption , Investment, Types, factors effecting Investment, and Theories of Investment including simple and flexible accelerator model.

Unit-II Demand for Money : Quantity theory of money—From Fishers Transaction approach to Cash- balance approach till the modified version of cash balance approach given by Milton Friedman. Baumol’s and Tobin’s approach for Transaction Demand for Money, Keynes theory of Demand for Money, Friedman’s theory of demand for money

Unit-III Supply of Money & Financial Markets: Money and credit-- measures of money supply, credit multiplier, Factors affecting supply of money with special reference to factors considered by RBI, Financial markets and Asset markets.

Unit-IV Advanced Topics in Economics: Rational Expectations model, Imperfect information Aggregate supply curve, Random walk of GDP, Real business cycle theory, New Keynesian Model

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. Ljungqvist and Sargent, Recursive Macroeconomic Theory, (2nd ed. MIT Press 2004)
2. Carl E. Walsh, Monetary Theory and Policy (3rd ed., MIT Press, 2010).
3. David Romer, Advanced Macroeconomics (3rd ed.)
4. Dejong, D. N. and C. Dave, Structural macroeconometrics, Princeton Univ. Press 2007

SSE 661: Research Methodology

Course Outcome:

- This course enables the students in developing the appropriate methodology for their research studies;
- Familiarize with the art of using different research methods and techniques.

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

Third Semester

SSE-533: Environmental Economics

Course Outcome:

This course is a unique inter-disciplinary course. The main objective of this course is

- to orient students with the techniques used in analyzing the impact of economic activity and policy on the environment.

Unit-I Market Failure and Externalities: Environmental problems- A Market failure, Public goods and bads, Optimal provision of public goods and bads, Pricing public goods and bads, Externalities, externalities as public bads

Unit-II Valuation of Non-marketable goods: Environmental benefits-conceptual issues, Approaches to measuring environmental benefits, Environmental costs-conceptual issues, Estimation methods for measuring explicit costs, Cost classification in practice, Benefit-Cost Analysis in Environmental Decision making

Unit-III Environmental Policy Instruments: The Market Approach- types of market instruments- product charge, Pigouvian tax, environmental subsidy

Unit-IV Renewable Resources and Common Property Resources: Renewable resources, Property right- The Coase Theorem, common property resources

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

Detailed Syllabus: Core Courses (MSc Five Year Integrated)

First Semester

SSEI 110 Foundations of Microeconomics-I

Course Outcome:

- 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.

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

Unit-II Demand and Supply: Demand and Supply analysis, Elasticity, classification of commodities: Normal, Inferior and Giffen goods, Consumer Surplus & producer Surplus, Indifference curves Mechanics of Equilibrium Price Determination

Unit-III

Theory of Consumer Behaviour: Basic concepts; Marshall's Approach; Ordinal Utility Theory: Optimizations, derivation of demand function; Consumer's Equilibrium, Indifference curves Price-effect: substitution and income-effects and Samuelson's Revealed Preference Theory.

Unit-IV

Theory of Production: Production function: one-input model, law of diminishing marginal product, Behaviours of total, marginal, and average products. Two-input model: isoquants and iso-cost lines or budget line, Producers' Equilibrium, expansion path.

Unit V

Costs and Revenue Analysis: Concepts of Costs, Short-run Cost Analysis: behaviour of short run average and marginal costs, Long run cost analysis: behaviour of long run average and marginal costs, Behaviour of long run average cost (LAC) and the relationship with economies and diseconomies of scale, Envelope curve, Concepts of Revenue and Revenue curves under perfect competition and imperfect competition.

Unit VI

Perfect and Imperfect Competitive Market Structures.: Perfect market structure and imperfect market structure, characteristics, Price and Output Determination under Perfect Competition, Monopoly and Monopolistic Competition.

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

SSEI-111: Foundations of Macroeconomics-I

Course Outcome:

- This course introduces the students to macroeconomic and various theories of employment and output and their determination.
- The course develop an understanding of macroeconomic concepts of the economy into the mind of the students.

Unit I- **Introduction:** What is Macroeconomics- Its origin and roots, major issues and concerns of Macroeconomics, Measuring the value of Economics Activity- National Income accounting, GDP and its nuance, CPI and other price deflator, Circular flow of income – in closed and open Economy.

Unit II- **Money:** What is money, Quantity theory of money, determination of supply and demand of money, credit creation, tools of monetary policy.

Unit III- **Inflation:** What is inflation, price and inflation, types of inflation, hyperinflation.

Unit IV- **Classical theory of determination of income and employment:** Theory of income and employment, say's law, classical theory of wage-price flexibility and full employment, Determination of income and employment without saving and investment (labour market equilibrium), determination of income and employment with saving and Investment.

Unit V- **Simple Keynesian model of income and employment determination:** Principle of effective demand, Aggregate demand function, Aggregate supply function, Keynes theory of employment and income, Money wage rigidity, multiplier.

Unit VI- **Economic Growth:** Solow model; golden rule; technological progress and elements of endogenous growth model.

Recommended books:**Text Books:**

1. Mankiw, N.G. Macroeconomics. (Worth), 5th ed (I have 5th edition to prepare myself for the class, If you are planning to buy this book, go for the most recent edition)

Reference Books:

1. Blanchard, O. Macroeconomics. (Prentice Hall)
2. Dornbusch, R., S. Fischer and R. Startz, Macroeconomics. (McGraw-Hill)

SSEI- 112: Mathematics-I**Course Outcome:**

- Create a strong foundation of basic mathematical tools and techniques that are essential to understand economic theory.

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

Second Semester

SSEI-150: Foundations of Microeconomics-II

Course Outcome:

- The emphasis will be on giving conceptual clarity to the student coupled with the use of mathematical tools and reasoning.
- Conceptualize general equilibrium and welfare,
- Explore imperfect markets and topics under firm behaviour.

Unit I

Review of Various Approaches to Consumer behaviour: Cardinal approach, Ordinal approach-Hicks Vs Slutsky methods and Applications, Revealed Preference Hypothesis- Weak and Strong Axioms Recent Development in the Theory of Consumer Behaviour- Understanding through Stock Adjustment Principle, Habit Creation Principle; R-Stone Principle

Unit II

Production Analysis: Traditional and Modern Approach: Production Function, Returns to Factor and Scale; Topics in Production Function- Homogeneity & Examples-Cobb-Douglas & CES production function- Derivation of properties, Cost Analysis: Traditional Approach Vs Modern Approach-Some Typical Cost curves, Excess capacity Vs Reserved capacity

Unit III

Marginalist Controversy and Average Cost Pricing: Marginalist Controversy and Average Cost Pricing: Hall and Hitch Report and Full-Cost Pricing; Gordon's Attack; The Mark-Up Rule; Bain's Limit-Pricing theory; Recent developments in Limit Pricing Theory: Sylos-Labini, Franco-Modigliani, Bhagwati, Pahlitzsch models

Unit IV: Managerial Theories of Firm

Firm and firm's objective- profit maximization, Sales maximization, Maris and Williamson's Model, Satisficing Model

Unit V:

Price and Output Determination under Collusive Oligopoly: Cartels: Market sharing and joint profit maximization; Price leadership: Low-cost, Dominant firm, and Barometric price Leaderships. Theory of Games and collusive oligopoly: Two-person Zero-Sum Game; Certainty and Uncertainty Model; Non Zero-Sum Game; The prisoner's Dilemma, Nash- Equilibrium.

Unit VI

Factor Pricing and Determination of Factor Income: Factor Pricing under Perfectly Competitive and Imperfectly Competitive Markets: Monopolistic and Monopsonistic powers; Determination of Rent: Traditional Vs Modern Theory; Theories of Wages, Profit and Interest.

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. 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

SSEI-151: Foundations of Macroeconomics-II**Course Outcome:**

- This course introduces the students to formal modelling of a macro-economy in terms of analytical tools.
- It discusses various alternative theories of output and employment determination in a closed economy in the short run as well as medium run, and the role of policy in this context.
- It also introduces the students to open economy macro issues.

Unit I: Consumption

Consumption – Income Relationship, Propensities to Consume and the Fundamental Psychological Law of Consumption; Implications of Keynesian Consumption Function; Factors Influencing Consumption Function; Measures to Raise Consumption Function; Absolute, Relative, Permanent and Life – Cycle Hypotheses

Unit II- Investment

Autonomous and Induced Investment, Residential and Inventory Investment, Determinants of Business Fixed Investment, Decision to Invest and MEC, Accelerator and MEI, Theories of Investment.

Unit III: Aggregate Demand and Aggregate Supply

Derivation of Aggregate Demand and Aggregate Supply Curves in the IS-LM Framework; Nature and Shape of IS and LM curves; Interaction of IS and LM curves and Determination of Employment, Output, Prices and Investment; Changes in IS and LM curves and their Implications for Equilibrium

Unit IV: Inflation, Unemployment and Expectations

Inflation – Unemployment Trade off and the Phillips Curve – Short run and Long run Analysis; Adaptive and Rational Expectations; The Policy Ineffectiveness Debate; Stagflation.

Unit V: Open economy models

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

Unit VI: Fiscal and Monetary Policy

Active or passive; monetary policy objectives and targets, effects of monetary and fiscal policy on aggregate demand and aggregate supply.

Recommended books:

Text Books

1. Mankiw, N.G. Macroeconomics. (Worth), 5th ed (I have 5th edition to prepare myself for the class, If you are planning to buy this book, go for the most recent edition)

Reference Books:

2. Blanchard, O. Macroeconomics. (Prentice Hall)
3. Dornbusch, R., S. Fischer and R. Startz, Macroeconomics. (McGraw-Hill)

SSEI-152: Mathematics-II

Course Outcome:

- Explore mathematical tools of optimization, dynamics and financial mathematics that enables the understanding of advanced level economic theories.

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*

Third Semester

SSEI- 211: Statistics-I

Course Outcome:

- Acquaint students with the statistical use in the field of Economics.
- Focus the study of the economy based on the likelihood that something is going to happen.

Unit I- Introduction: Definition and scope, characteristics, limitation of Statistics; types of data, meth concepts of statistical population and sample. Scales of measurement - nominal, ordinal, interval and ratio.

Unit II- Measures of Central Tendency: Types of average- arithmetic mean, weighted arithmetic mean. Mean, median, quartiles, deciles, mode, interrelation between mean, median and mode etc.

Unit III - Measures of Dispersion: range, quartile deviation, mean deviation, standard deviation, coefficient of variation, moments, measures of skewness and kurtosis, Lorenz curve.

Unit IV- Measure of Association between two variables: Correlation Analysis- Meaning & types of Correlation method, Method of correlation- Scatter diagram, Karl Pearson & Rank correlation, Spearman's Rank method, partial correlation coefficient.

Unit V- Regression Analysis: Simple linear regression, framing equations, determination of regression coefficient.

Unit VI- Time series and Index Number: Laspeyres, Pasche's and Fisher's ideal index numbers, time reversal, factor reversal;

Time series Analysis: components and measurements

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.

SSEI 312 Development Economics-I

Course Outcome:

- Basic demographic concepts and their evolution during the process of development.
- Study the structure of markets and contracts is linked to the particular problems of enforcement experienced in poor countries.
- Reflect on the role of globalization and increased international dependence on the process of development.

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 Lorenz 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 LowLevel 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:

International Trade and Development: Trade and Development – Static Gains from Foreign Trade and Dynamic Gains from Foreign Trade, Causes of Deterioration in TOT; Trade Strategy: Export led Growth – Arguments for Inwardlooking Strategy, Arguments for Outward-looking Strategy, Balance of payment, Tariffs and Elective Protection; Post-GATT International Economic Order and WTO; Globalization and Developing Countries. Inwards led growth. Trade war between U.S and China and its effect on International Trade order and developing nations.

Suggested Books

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

SSEI 313 Environmental Economics

Course Outcome:

- Focus on economic causes of environmental problems.
- Applications of economic principles 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.

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

Unit-III The market approach- types of market instruments, pollution charges, Pigouvian taxes, deposit refund system, environmental subsidies pollution permit trading system. **Unit-IV** Environmental risk Analysis- risk classification, risk assessment, risk management.

Unit-V Assessing benefits for environmental decision making- identifying and valuing benefit, direct and indirect estimation of benefit.

Unit-VI Environment and Sustainable Development: Sustainable development- a Global objective, Environmental Kuznets Curve, International trade, and environmental protection.

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

Fourth Semester

SSEI-220: Statistics-II (To be revised)

Course Outcome:

- Acquaint students with some advanced topics in statistical use in the field of Economics.
- Familiarize with concept of probability and sampling techniques
- Use of index number

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.

SSEI 221 Development Economics-II (To be revised)

Course Outcome:

- Discussion of alternative conceptions of development and their justification.
- Familiarize with models of growth and cross-national comparisons of the growth experience that can help evaluate these models.

UNIT I: Inequality, Poverty and Growth

Readings:

Ray: Chapter 7

Population and Economic Development

Janvry and Sadoulet -Chapter 11

Ray: Chapter 9

UNIT II: Poverty and Agriculture

Readings:

Datt, Gaurav and Martin Ravallion, (1998), "Farm Productivity and Rural Poverty in India", Journal of Development Studies, Vol.34, No.4, April, pp.62-85

Land

Readings:

Ray: Chapter 12

Rural Credit Markets and Micro Finance

Ray: Chapter 14 and Chapter 15

Armendariz and Morduch (2005), The Economics of Micro Finance, first Edition, Chapter 2 and Chapter 4

UNIT III: History and Institutions

Acemoglu, Daron., Simon Johnson, and James Robinson. (2001). "Colonial Origins of Comparative Development: An Empirical Investigation," American Economic Review, 91 (5), 1369-1401.

Acemoglu, Johnson, and Robinson, "Reversal of Fortunes: Geography and Institutions in the making of the modern world income distribution" QJE November, 2002

UNIT IV: Education and Health

Janvry and Sadoulet: Chapter 17 (Human Capital: Education and Health)

Conditional Cash Transfer (CCT) Programs and Schooling

Janvry and Sadoulet Chapter 14 (Social-assistance programs)

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

SSEI 222 Indian Economy (To be revised)

Course Outcome:

- 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.

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

- b. 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 Book:

1. Dhingra, Ishwar C. (2005); *The Indian Economy: Environment and Policy*, Sultan Chand and Sons, New Delhi
2. Datt, Riddar 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)

Fifth Semester

SSEI 310 Econometrics I

Course Outcome:

- Comprehensive introduction to basic econometric concepts and techniques.
- Construct models and estimate parameters
- Testing of two variable and multiple variable regression models.

Unit-I Introduction:

Nature, Meaning and Scope of Econometrics, Types of data for economic analysis, Distinction between Economics and Econometrics, Statistics and Econometrics, Mathematics and Econometrics, Stages of Econometric Research

Unit-II Elements of Statistical Theory:

Subscripts and summations, Frequency distributions and probability distributions, Population parameters and sample statistics, the algebra of expected values, laws of probability

Unit-III Statistical Inference:

Estimation, Elements of Statistical Theory, Hypothesis testing, confidence intervals, interval estimation, degrees of freedom

Unit- IV Classical Linear Regression Model:

Concepts and assumptions, Two variable linear regression model: estimation through OLS, Properties of Least Square Estimation (BLUE) and their proof

Unit- V Multiple Variable Linear Regression Model:

Concept, multiple variable linear regression model, Matrix Approach, Proof of properties, Functional forms of regression models, non-linear regression models, Model Construction and estimation by OLS in MS-Excel

Unit-VI Regression and Analysis of Variance:

The method of analysis of variance as a statistical method, Regression analysis and analysis of variance, Comparison, testing overall significance, testing the improvement of fit from additional regressors,

Recommended books:

1. Gujarati, D.N. (1995). Basic Econometrics (2nd Edn.). McGraw Hill, New Delhi.
2. Koutsoyiannis, A. (1977). Theory of Econometrics (2nd Edn.). The Macmillan Press Ltd., London.

SSEI- 311 International Economics

Course Outcome:

- 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.
- 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, New approaches to trade theory: The Product Cycle Theory, Technology Gap Theory; Causes of Emergence and Measurement of Intra-industry 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, Commercial Policies of Trade- Tariff and Quotas

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, Terms of Trade and Economic Integration

Unit -V Exchange Rate Determination and Theories of Exchange Rate Fixed Exchange Rate and Flexible Exchange Rates; Exchange rate determination -Mint Parity Theory, Purchasing Power Parity Theory-Absolute and Relative Version, Balance of payment Theory

Unit- VI

Balance of Payments and Adjustments Concepts and components; Causes of disequilibrium and different approaches: Elasticity, Absorption and Monetary approach, Foreign trade multiplier

Text Books:

1. Salvatore.D.: International Economics,8/e,Willey 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
3. Deepak Nayyar: Trade and Industrialisation, Oxford University Press

4. Soderston, B.: International Economics, TheMcmillan Press Ltd. London
5. Cherunilam: International Economics, Tata McGraw Hill,5th edition

Sixth Semester

SSEI 321 Econometrics II

Course Outcome:

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

Unit-I Violations of Classical Assumptions and Remedies:

Problems of heteroscedasticity, autocorrelation and multicollinearity: Nature, test, consequences and remedial measures

Unit-II Econometric Modeling:

Model selection criteria, Types of specification errors, consequences of model specification errors, tests and errors of measurement, incorrect specification of the stochastic error term,

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, ILS, 2SLS, 3SLS, Instrumental Variables

Unit-IV Dummy Variable Regression Models

Time as a variable, Nature of dummy variables, Dummy variable as proxies to qualitative factors, as proxies to numerical factors, as proxies for the dependent variable, for seasonal adjustment of time series, ANOVA Models

Unit-V Qualitative Response Regression Models:

Nature, Linear Probability Model (LPM), Logit Model, Probit Model, Tobit model

Unit- VI Dynamic Econometric Model:

Role of time or lag in Economics, reasons for lag, Autoregressive and distributed lag models, Koyck's approach, partial adjustment and adaptive expectations model

Recommended books:

1. Gujarati, D.N. (1995). Basic Econometrics (2nd Edn.). McGraw Hill, New Delhi.

2. Koutsoyiannis, A. (1977). Theory of Econometrics (2nd Edn.). The Macmillan Press Ltd., London.

Seventh Semester

SSEI-410 Advanced Microeconomics

Course Outcome:

- This course is designed to expose the students to the advanced principles of microeconomic theory.
 - The main emphasis will be given on thinking like an economist and the course will elaborate how microeconomic concepts and theories can be applied to analyze real-life situations.
 - The course provides a detail explanation of some of the more advanced topics like the notion of general equilibrium, efficiency and optimality from a society's point of view and a brief discussion of welfare approaches.
 - Determine the interrelationship between product price and factor price in different market situations.
 - Understand the advanced managerial models based on the goals of sales maximisation, growth maximisation and other topics related to Efficiency and Optimality from a society's point of view.
 - Evaluate general equilibrium analysis in analyzing the behaviour of multiple markets simultaneously, and how a change in one affects the other.
 - Apply their knowledge in wide variety of microeconomic issues ranging from factor pricing to social welfare.
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UNIT-I Factor Pricing: Theories of Distribution: Neo-classical approach - marginal productivity theory; Some additional topics on factor pricing and Income distribution-The Adding-up problem: 'Product Exhaustion' Theorems-Euler's Theorem & Clark-Wicksteed-Walras Theorem

UNIT-II Managerial Theory of the Firm: Managerial Theory of the Firm-Boumol's theory of Sales Maximisation with and without Advertising Cost, Marris's Model of the Managerial Enterprise and Williamson's Model of Managerial Discretion

UNIT-III General Equilibrium and Welfare: The Walrasian System; Existence, Uniqueness and Stability of an Equilibrium, **Welfare Economics.** Pigouvian welfare, Pareto Optimality, Kaldor-Hicks Compensation Criterion, Scitovsky Double Criterion, Social Welfare Function and Maximisation of Social Welfare

UNIT-IV Market Failure: Monopoly power, Externalities in Production and Consumption, Public goods Vs Private goods, Free Rider Problem Coase Theorem, Asymmetric Information: The Market for Lemons and Adverse Selection

Reference Books:

1. Case, Karl E., Ray C. Fair and Sharon E. Oster (2013) *Principles of Economics*, (11th Edition), Prentice Hall of India, New Delhi
2. Koutsoyiannis, A. (1990) *Modern Microeconomics*, Macmillan Press Ltd., London
3. Salvatore, D *Principles of Microeconomics* (5th Edition) Oxford University Press, New Delhi
4. Layard, P.R.G. and A. W. Walters (1978) *Microeconomic Theory*, McGraw Hill, New York
5. Lipsey, R.G. and K.A. Chrystal (2004) *Principles of Economics*, (9th Edition), Oxford University Press, New Delhi
6. Perloff, Jeffrey M. (2001) *Micro Economics*, Addison Wesley Longman Pvt. Ltd., New Delhi
7. Sen, A. (1999) *Microeconomics Theory and Applications*, Oxford University Press, New Delhi
8. Stigler, G. (1996) *Theory of Price*, (4th Edition), Prentice Hall of India, New Delhi

SSEI 411: Advanced Econometrics

Course Outcome:

- 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 Panel Data Regression Models:

Introduction, advantage over cross-section data, balanced and unbalanced panel, pooled OLS, Least Squared Dummy Variable model, random effect model

Unit III Time Series Econometrics:

Basic Concepts: Stochastic process- stationary, non-stationary, white noise, Random walk model, Unit Root, Correlogram, Concept of forecasting or prediction, Introduction to ARIMA models, VAR models- AR, MA, ARMA process, Box-Jenkins Methodology

Unit IV Applications of Econometric Techniques:

Introduction to econometric software, Free-source software will be used to study the applications of single equation models

Recommended 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.
3. Pindyek, R.S. and D.L. Rubinfeld (1976). *Econometric Models and Economic Forecasts*; McGraw

SSEI-412: Mathematical Economics

Course Outcome:

- 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.

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:

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*

SSEI 413: Advanced Statistics for Economics

To be prepared

Eighth Semester

SSEI-420: Advanced Macroeconomics

Course Outcome:

- The purpose of teaching 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.

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

SSEI-421 Operations Research

Course Outcome:

- This course is designed to elaborate the topics related to application of economics and industrial field
- To build the capability of solving quantitative real life problem to obtain the right and optimum solution.

Unit-I Introduction

Definition, role of operation research in decision-making, application in industry, Concept on O.R. model building-Types & Methods

Unit-II Linear Programming and Advanced Topic of LP

Overview of Linear programming-solution-Graphical and Simplex methods, BIG-M methods computational problems, duality, primal-dual relations-its solution, non-linear programming, Kuhn-Tucker conditions

Unit-III Deterministic Model

Transportation problem- balanced & unbalanced, North-West Corner method, Vogel's Approximation method, Least-cost Method, Assignment problem

Unit-IV Queuing Theory and Project Management

Introduction to queuing theory, features of queuing system, Introduction to project management, Network diagram, activity, PERT & CPM, float in network, Introduction to decision theory, decisionmaking with utilities, problems.

Text Books:

1. Operation Research-TAHA, PHI, New Delhi.
2. Principles of Operation Research- Ackoff, Churchman, Arnoff, Oxford IBH, Delhi.

Reference Books:

1. Operation Research-Gupta & Sharma, National publishers, New Delhi.
2. Quantitative Techniques- Vohra, TMH, New Delhi.
3. Principles of Operation Research (With Applications to Managerial Decisions)- H.M.Wagner, Prentice Hall of India, New Delhi.
4. Operation Research-Sharma & Gupta, Wiley Eastern, New Delhi.
5. Operation Research-Phillips, Revindran, Solberg, Wiley ISE

SSEI 422 Public Economics

Course Outcome:

- The course is designed to equip students in broad arenas of public finance and some other selected topics in public sector economics.
- Emphasize on impact analysis of impact of public policies on resource allocation and distribution in the economy

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, Edgeworth 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. Buitner, 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, Akansha Publishing House, ND.
5. Prest, A.R. (1975): Public Finance in Theory and Practice, Weidenfeld and Nicholson, London.

SSEI-423: Research Methodology

Course Outcome:

- This course enables the students in developing the appropriate methodology for their research studies;
- Familiarize with the art of using different research methods and techniques.

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:

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

Ninth Semester

SSEI-510: Indian Economic Development and Policy

To be prepared

Detailed Syllabus of Elective Courses (UG and PG)

SSEI-DSE-01 Network Economics

Course Outcome:

- This course introduces and develops the concept of network economics as a powerful tool for decision-making today.
- It provides the foundations of networks both as an intuitive tool and graphical medium as well as a rigorous methodological one for the formulation, qualitative analysis, and computation of solutions to economic equilibrium problems.
- Focus on both physical networks such as transportation networks, whose structure maps into nodes, links, and flows, and abstract networks, whose network mapping is not intuitively obvious.
- The course traces the history of networks in the global economy and demonstrates how a variety of economic problems are concerned with flows over space and time where the flows may be of commodities, humans, money, and/or informational.
- It provides the basic theory of networks and overviews the fundamental theory of mathematical programming, specifically, optimization theory and variational inequality theory, to enable the formulation and solution of the network problems.
- The course also surveys effective computational algorithms which take advantage of the underlying network structure of the problems.

Unit-1:

1. Introduction: Overview of Network Economics, its History, and its Importance in Economics Today, Mathematical Background: Basics of Nonlinear Programming Theory Basics of Network Theory, The Variational Inequality Problem: Basic Qualitative Theory Relationship to Optimization Problems and Other Classical, Mathematical Programming Problems, Sensitivity Analysis

Unit-2:

Algorithms for the Solution of Variational Inequality Problems: The General Iterative Scheme - Projection and Relaxation Methods, The Modified Projection Method Decomposition Methods - Serial and Parallel,. Basic Models of Traffic Assignment and Solution Procedures: Introduction and History, The Standard Model, The Extended Model Multimodal Models, The Elastic Demand Model

Unit-3:

Environmental Networks: Overview of Environmental Issues and Policies, Spatial Oligopoly with Permits, Qualitative Properties, Knowledge Networks: Conceptualization and History, Basic

Models Migration Networks: The Costless Model, Model with Migration Costs, Model with Class Transformations, Financial Networks: Portfolio Optimization as a Network Flow Problem, Multi-Sector, Multi-Instrument Financial Equilibrium, Policy Interventions

Unit- 4

Multicriteria Network Equilibrium Modeling for the Information Age: Multicriteria Decision-Making on Networks, Equilibrium Concepts, pplication to Teleshopping and Telecommuting Decision-Making, Space-Time Networks: Extension of Multicriteria Decision-Making to Decision-Making Over Space and Over Time, Application to Telecommuting versus Commuting Decision-Making

Supply Chain Networks with Electronic Commerce,Introduction to Supply Chains and Network Agents,Electronic Commerce: B2B and B2C,Network Equilibrium,Applications and Extensions

Readings

1. (Required) Newman, Mark. Networks: An Introduction. Oxford University Press, 2010. ISBN: 9780199206650.
2. (Recommended) Easley, David and Jon Kleinberg. Networks, Crowds, and Markets: Reasoning about a Highly Connected World. Cambridge University Press, 2010. ISBN: 9780521195331.
3. (Recommended) Jackson, Matthew. Social and Economic Networks. Princeton University Press, 2010. ISBN: 9780691148205.
4. (Recommended) Osborne, Martin. Introduction to Game Theory. Oxford University Press, 2003. ISBN: 9780195128956.

SSEI-DSE-02 Labour Economics

Course Outcome:

- This course provides a general introduction to the field of labour economics and as such is an application of basic microeconomic principles.
- The approach to studying labour economics will be both theoretical and empirical
- Discuss models of how labour markets function,
- Discuss the evidence on how well the real world matches the predictions of such models.

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

SSEI-DSE-03 Agriculture Economics

The basic objective of course content is-

1. To understand nature, scope of agriculture economics
2. To introduce different theories related to agriculture economics
3. To demonstrate a basic knowledge of the principle of economics and their application in agriculture problem.
4. To introduce different policies related to agriculture sector in India.

Unit 1- Agriculture and Economic development

Definition and characteristics of agriculture; role of agriculture in economic development; linkages between agriculture and Industry; Agriculture and rural poverty; types of farming, types of farm business organizations, FPOs.

Unit 2- Theories of Agriculture development

Schultz theory of transformation traditional agriculture, Mellor model of agriculture development, boserup, Lewis, Fei- Renis Model of agriculture development

Unit 3 - Agriculture Production and productivity

Basic concepts and principles of production in agriculture economics, principles of resource allocation; production function approach, increasing and diminishing production function; total, average and marginal product curve and the relation between them, stages of rational and irrational production, farm size and productivity. The factor- product, factor-factor and product- product relationship. Technology and farm mechanization, Measuring costs **&returns of crops,**

Unit 4 - Indian Government Policy on Agriculture

Farm reforms,

Agriculture credit and marketing policy in India, Crop insurance policy, first, Second green revolution, Issues and problem in rural industrialization, Agriculture Price policy; Risk and uncertainty in agriculture- crop insurance and marketing policies- role of the state.

Ref- GS Bhalla (2009-10), Oxford Press

SSEI-DSE-04 Public Economics

This course covers the key aspects of public finance and public policy theory which helps the students to understand the government's role in the economy. It enables the students to understand how to deal with political and economic policy problems and also to participate in public policy debates.

Unit-I Public Finance: Principles of Public Finance: Principles of Maximum Social Advantage. Role of Public Finance in the Developing Economics. Fiscal Economics : An Overview. of allocation, distribution and stabilization. Functions. Market failure. Public goods and externalities. Public goods and free-rider problem.

Unit-II Taxes, Public Expenditure, Debt and Budgeting: Public Expenditure, Structure and Growth, Wagner's Law, Peacock-Hypothesis, Cost Benefit Analysis, Shadow Pricing, Discount Rate, Budgeting, Public Borrowing Public Debt, Budgeting and Zero Based, Benefits and Ability to Pay Approaches to Taxes Allocative and Equity Aspects of Taxes, Deadweight Losses, Excess Burden, Trade off Between Equity and Efficiency.

Unit-III Fiscal Policy: Fiscal Crisis and Fiscal Sector Reforms in India, Problem of increasing deficit at the Central and State levels – Gross Fiscal deficit, Revenue Deficit, Primary Deficit, Financing of Fiscal Deficit, Fiscal consolidation Measures at the Central and State levels; Fiscal Responsibility and Budget Management (FRBM) Act,2003; Agenda for future Fiscal reforms in India.

Unit-IV Fiscal Federalism: Development of Federal Finance in India, Constitutional provisions and Statutory provisions relating to appointment of Finance Commission, issues and approaches of various Finance Commission, changing criteria for Transfer of resources from Central to States, devolution of resources and grants from Central to States; problems of horizontal and vertical imbalances, problem of states' resources and indebtedness, Recommendations of the Twelfth and Thirteen Finance Commission, Role of Finance Commission versus Planning Commission in transfer of resources from the Centre to the States.

Recommended Books:

Text Books:

1. Musgrave, Richard A, Musgrave, Peggy B; Public Finance in Theory and Practice, 5/eTata Mc Graw Hill Company, New Delhi 2004
2. Chelliah Raja J; Fiscal Policy in Under Developed Countries, George Allen and Unwin, London 1971
3. Bhargava, R.K.; Some Aspects of Indian Public Finances, Uppal Publishing House, New Delhi – 1985
4. Dr. S.K. Singh, “Public Finance in Theory And Practice”, S. Chand

Reference Books:

1. Duff L, Government and Market, orient Longman, New Delhi 1997.
2. Qullis. John and Jones Phillip: Public Finance and Public Choice, Oxford University Press, Second Edition 1998
3. Atkinson Anthony B, Stiglitz, Joseph E; Lectures on Public Economics, Mac Graw Hill Book Co. Singapore 1980
4. American Economic Association: Reading in Fiscal Policy, George Allen and Unwin, London – 1955.

SSEI DSE-07 Banking and Monetary Economics

Course Outcome:

- 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.
- 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.

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
Various latest issues of R.B.I. Bulletins, Annual Reports, Reports on Currency and Finance and Reports of the Working Group, IMF Staff Papers

SSEI DSE-08 Economics of Discrimination

Course Outcome:

- To introduce students to economic analysis of discrimination and affirmative action.
- Bring out the effect of affirmative action (good and bad) on the society leading to 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 economicof poverty and discrimination, 10thEdition
2. R.Alebelda, Robert Drago Steven shulma (Economic Affairs Bureau) unlevel playing fields understanding equality and discrimination (2nd edition)
3. D.Nesia,Discrimination with reason,Oxford University press 1997.
4. Amartya Sen,On economic Inequality clarendon press 1997.

SSEI-DSE-09 Basics of Economic Psychology

Course Outcome:

- This course is intended for students interested in research.
- This course integrates psychological insights into economic models of behavior.
- Develop an understanding of the main economic phenomena in everyday life from psychological point of view.
- Understand why people do not always act rationally 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.

SSEI DSE-15 Public Policy- Theory and Practices

Course Outcome:

- Develop a comprehensive toolkit for applying economics to policymaking.
- Become a consumer of economic thinking.
- Learn practical skills that will have an immediate impact on your work.

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
9. Bardhan, Pranab K. "Understanding underdevelopment: Challenges for institutional economics from the point of view of poor countries." Journal of Institutional and Theoretical Economics (JITE)/ Zeitschrift für die gesamte Staatswissenschaft (2000): 216-235.

SSEI DSE-17 Health Economics

Course Outcome:

The importance of education and health in improving well-being is reflected in their inclusion among the Millennium Development Goals adopted by the United Nations member states, which include among other goals, achieving universal primary education, reducing child mortality, improving maternal health and combating diseases.

- 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.

Unit 1

State and Scope of Health Economics. Normative economics and health. Role of Health and Education in Human Development (Importance in poverty alleviation, health and education outcomes and their relationship with macroeconomics performance).

Unit 2

Microeconomic Foundations of Health Economics (Demand for health, uncertainty and health insurance market, alternative insurance mechanisms, market failure and rationale for public

intervention, equity and inequality). Evaluation of Health Programs (Costing cost effectiveness and cost- benefit analysis, burden of disease).

Unit 3

Health Sector in India: An Overview (Health outcomes, health systems, health financing).

Unit 4

Education: Investment in Human Capital (Rate of return to education: private and social, quality of education, signaling or human capital, theories of discrimination, gender and caste discrimination in India). Education Sector in India: An Overview (Literacy rates, school participation, school quality measures)

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)

SSEI DSE-19 Regional Economy of Himalayan States

Course Outcome:

- Study the characteristics of mountain economies and structural transformation
- Impact of outmigration on income and household economy
- Analyze the impact of Tourism on income
- Study and analyze Sustainable development goals

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; From 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.

SSEI DSE-20 Game Theory

Course Outcome:

- 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.
- Provide students with a foundation to apply game-theoretic analysis, both formally and intuitively.
- Develops capability to negotiation and bargaining situations and Recognize and assesses archetypal strategic situations in complicated negotiation settings.

Unit-I Introduction: What is Game Theory? 1.3. 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

SSEI DSE-21 Behavioural Economics

Course Outcome:

- Introduces the fast-evolving field of behavioural economics.
- Study the interaction between experimental results and the development of theory.
- Learn 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. Dhimi, S.: The Foundations of Behavioural Economic Analysis, Oxford University Press (2016)

Detailed Syllabus of GE/AE/SE

Generic Elective Courses (GE)

SSEI-GE-03 Regional Development and Regional Economics with Special Emphasis on Uttarakhand

This course provides a framework within which the spatial dimension of economic issues pertaining to the development of Uttarakhand State may be understood.

Unit-I Regional Planning and Development: Meaning and importance of regional planning, Small state and regional planning, Planning process in Uttarakhand: An evaluation, Characteristics of Uttarakhand economy, Characteristics which effect regional economy and planning of Uttarakhand, Problems of regional planning in Uttarakhand, Natural and human resources of Uttarakhand, Trends and Structure of GDP of Uttarakhand, Budgetary allocation to different sectors and thrust areas of the budget, Changing structure of income in Uttarakhand

Unit-II Demographic Features, Poverty, Inequality and Employment in Uttarakhand: Population size and growth, Sex ratio, Population density, Average household size, Urbanization, Literacy, Mortality and life expectancy, Fertility, Age structure, Religious composition, Current debate on demographic dividend in India and population structure in Uttarakhand, Trends and patterns of poverty in Uttarakhand, Rural poverty, Urban poverty, Policy implications, Worker population ratio, Growth and structure of employment, Characteristics of employment and wage rate, Sectoral employment perspectives, Role of women in Uttarakhand economy

Unit-III Agricultural Growth, Productivity Trends and Crop Patterns: Agriculture sector in Uttarakhand, Share and growth rate of agriculture sector in Uttarakhand, Trends in the area, production and yield of the major crops, Land use and cropping pattern in Uttarakhand, Factors affecting agricultural performance in Uttarakhand, the role of technology in agriculture in Uttarakhand, Irrigation, Agriculture and agriculture based economic activity, Commercial crops, dairy farming, Agro based cottage industry, cottage industry and small scale industry, Food processing and agro industries in Uttarakhand, challenges and outlook of agriculture in Uttarakhand

Unit-IV Industrial Sector in Uttarakhand: The industrial scene at the time of creation of the state, Extent and pattern of industrialization in Uttarakhand, Productivity trends in the manufacturing sector, Some critical dimensions of industrial development, Recent policy initiatives, Micro and small enterprises (MSEs), Public sector enterprises (PSUs), challenges and outlook, Tourism Industry-Role of tourism in Uttarakhand economy, Tourism policies in Uttarakhand, Tourism based small scale industry in Uttarakhand, Employment potential of tourism in Uttarakhand, Resources in Uttarakhand-Water and land resources, Energy, Hydro-potential in Uttarakhand

Recommended Books:

References Books:

1. R.R. Nautiyal & R. Datta, "Development Dynamics of a Himalayan State", Kalpaz publications.
2. **Uttarakhand Development Report**, published by Academic Foundation under arrangement with Planning Commission, GoI, New Delhi, Paper Back Book (8½" x 11") : Pages : 516, 2009 Edition: ISBN - 978-81-7188-776-7
3. GIZ and Doon University, **Uttarakhand: Diagnostic Study of Building a Mountain State** published in 2000-2010.

SSEI-GE-05 Poverty & Inequality

The aim of this course is for students to come away with an understanding of recent historical trends in terms of thinking about poverty and its causes and how that thinking influences policy making. There will usually be a short overview/lecture, but much of the class will be focused on discussion. Students will be expected to come to class prepared, having done the readings and to engage in class and small group discussions.

Unit-I Introduction: Meaning, concept, Measurement; Empirical Observation, Impact of Poverty; Studies of Poverty in India; Planning Commission's Estimate of Poverty; NSSO 55th 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

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

Assignments (Presentation & Classroom Discussions)

- Does within-country inequality (or only poverty) matter for development?
- Is globalization (open markets) reducing inequality within countries? Across Countries? Are open markets good for development?
- Are global rules and institutions reducing global inequality and advancing Development?
- Tendulkar's Report on Poverty

Recommended Books:

Text Book:

1. Ray, Debraj (1998), *Development Economics*, Princeton University Press

Reference Books:

1. Mishra Puri, "Indian Economy, 29th ed., Himalaya publishing House
2. Datt & Sundharam, "Indian Economy, 68th revised edition S.Chand
3. Amartya Sen, "Poor relatively Speaking" Oxford Economic Papers 2 (35) July 1983, 153-169.
4. Commentaries (rejoinders) 2005. Measurement vol 3(4)
5. 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>
6. Iceland, John (2003). Poverty in America: A Handbook – 2nd Edition, Chapter 1, and 3: 1-37 (Chapter 2 optional, but provides interesting historical context).
7. 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.
8. Bipartisan Call for New Federal Poverty Measure. New York times, September 01, 2008.

Calculating Poverty in New York: More by City standard, less by Federal. New York Times, March 2, 2010.

SSEI-GE-06: Gender Economics- Women and The Economy

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 "Economics of Gender and Development" would provide students an understanding of the nature of the economic role of women and their contribution to the national economy. The modules incorporated in this course provide an analysis of issues at the theoretical level and also with regard to specificity of issues prevailing in the Indian context.

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.

Recommended Books:

1. Amsden, A.H. (ed.). (1980). *The Economics of Women and Work*, Penguin, Harmondsworth.
2. Agarwal, B. (1994). *A Field of One's Own: Gender and Land Rights in South Asia*, Cambridge Univ.Press, Cambridge.
3. Baud, I.S.A. (1992). *Forms and Production and Women's Labour: Gender Aspects of Industrialization in India and Mexico*, Sage Publications, New Delhi
4. Boserup, E. (1970). *Women's Role in Economic Development*, George Allen and Unwin, London.
5. Carr, M.C. Matha and R. Jhabvala (eds.) (1997). *Speaking Out: Women's Economic Empowerment in South Asia*, Vistaar Publications, New Delhi.
6. Dantwala, M.L., H. Sethi and P. Visaria (1998). *Social Change Through Voluntary Action*, Sage Publications, New Delhi.
7. Engles, F. (1985). *The Origin of the Family, Private Property and the State*, Progress Publications, Moscow.
8. Kabeer, N. (1994). *Reversed Realities: Gender Hierarchies in Development Thought, Kali for Women*, New Delhi.
9. Kabeer, N. and R. Subrahmanian (eds.). (1999). *Institutions, Relations and Outcomes*, Kali for Women, New Delhi.
10. Kalpagam, U. (1994). *Labour and Gender: Survival in Urban India*, Sage Publications, New Delhi.
11. King, M. and M.A. Hill (eds.) (1993). *Woman's Education in Development Countries: Barriers, Benefits and Politics*, John Hopkins, Baltimore.
12. Krishnaraj, M., R.M. Sudarshan and A. Shariff (1999). *Gender, Population and Development*, Oxford University Press, New Delhi.
13. Kuhn, A. and A.N. Wolpe (eds.). (1978). *Feminism and Materialism*, Routledge and Kegan Paul, London.
14. Mazumdar, V. (1979). *Symbols of Power: Studies on the Political Status of Woman in India*, Allied, Delhi.
15. Mies, M. (1998). *Patriarchy and Accumulation on a World Scale: Women in the International Division of Labour*, Zed Books, London.
16. Mishra, S. (2000). *Voluntary Action in Health and Population: The Dynamics of Social Transition*, Sage Publications, New Delhi.
17. Mitra, A. (1979). *Implications of Declining Sex Ratio in India's Population*, Allied, New Delhi.
18. Papola, T.S. and A.N. Sharma (eds.) (1999). *Gender and Employment in India*, Vikas Publishing House, New Delhi.
19. Sen, G. and K. Brown (1987). *Development, Crises and Alternative Visions*, Monthly Review Press, New York.

20. Seth, M. (2000). *Women and Development: The Indian Experience*, Sage Publications, New Delhi.
21. Venkateswaran, S. (1995), *Environment, Development and the Gender Gap*, Sage Publications, New Delhi.
22. Wazir, R. (2000), *The Gender Gap in Basic Education : NGOs as Change Agents*, Sage Publications, New Delhi.
23. Agnihotri, S.B. (2000). *Sex Ratio in Indian Population: A Fresh Exploration*, Sage Publications, New Delhi.
24. Custers, P. (1997). *Capital Accumulation and Women's Labour in Asian Economics*, Vistaar, New Delhi.
25. Desai, N. and M.K. Raj (eds.). (1979). *Women and Society in India*, Research Centre for Women Studies, SNDT University, Bombay.
26. Dwyer, D. and J. Bruce (eds.). (1988). *A Home Divided: Women and Income in the Third World*, Standard University Press, Stanford.
27. 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.
28. ILO (1978). *Women's Participation in the Economic Activity of Asian Countries*, ILO, Geneva.
29. Jhabwala, R. and R.K. Subramanya (eds.). (2000). *The Unorganized Sector: Work Security and Social Protection*, Sage Publications, New Delhi.
30. 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.
31. Narasimhan, S. (1999). *Empowering Women: An Alternative Strategy from Rural India*, Sage Publications, New Delhi.
32. Papola, T.S. and A.N. Sharma (eds.) (1999). *Gender and Employment in India*, Vikas, New Delhi.
33. Purushothaman, S. (1988). *The Empowerment of Women in India: Grassroots Women's Network and the State*, Sage Publications, New Delhi.
34. Schultz, T.P. (1988). "Education Investments and Returns", in Chenery, H.B. and T.N. Srinivasan, *The Handbook of Development Economics*, North Holland, New York.
35. Seth, M. (2000). *Women and Development: The Indian Experiences*, Sage Publications, New Delhi.
36. Srinivasan, K. and A Shroff (1998). *India: Towards Population and Development Goals*, Oxford University Press, New Delhi.
37. Venkateswaran, S. (1995). *Environment, Development and the Gender Gap*, Sage Publications, New Delhi.
38. Wazir, R. (2000). *The Gender Gap in Basic Education: NGOs as Change Agents*, Sage Publications, New Delhi.
39. Yong, K. et al. (eds.). (1987). *Serving Two Masters*, Routledge and Kegan Paul, London.

SSEI-GE-07 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

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

Ability Enhancement Courses (AE)

SSEI-AE 01 English Language, Communication Skills

Course Outcome:

- Provide the foundation in English Grammar, sentence structure, Phonetics or suitable pronunciation required for correct verbal and written communication.
- Activities such as Group Discussions, Mock Interviews and Power Point Presentations aimed at enhancing skill and confidence in verbal communication are regularly arranged in class.
- Expertise at interaction based on active listening is developed.
- Students study poems, plays or short stories in English Literature to comprehend the subtle nuances of expression and use them in creative writing to enhance the beauty in verbal or written content.

Unit I: Foundation in Grammar and basic writing skills Sentence structure and Parts of Speech, paragraph and essay writing, Precis writing, Formal Letter.

Activity – Enacting or reading out a play with proper stress, pause, modulation and the required tone. Enhancing the finer nuances of verbal communication.

Unit II – Phonetics and Creative Writing Phonetic Transcription: learning correct pronunciation through sound symbols.

Literature – Study of short story, poetry and learning the art of expression through poetry, play and prose.

Recommended books:

Text Books

1. Sylvia Chalker and Edmund Weiner, Oxford Dictionary of English Grammar.
2. Abercrombie, D., Elements of General Phonetics, Edinburg University Press.
3. Austin J. L., How to Do Things with Words, Harvard University Press.

Reference Books

1. The Essential Guide to English Usage, Chancellor Press.
2. Abrams M.H., A Glossary of Literary Terms, Prism Books Pvt Ltd.

SSEI-AE 02 Environmental Studies

Course Outcome:

- Scientific study of the environment in combination with living organisms.
- Emphasize environmental studies on a rational approach involving the application of scientific and technical information to understand, conserve and manage the environment and its resources.

Unit I: Introduction definition, Objectives, Scope and Importance of Environmental Studies
Segments of Environment: Atmosphere, Hydrosphere, Lithosphere and Biosphere .Need for public awareness

Unit II: Natural Resources Renewable and Non-renewable resources, Forest resources, water resources, mineral resources, Food resources, Energy resources, land resources. Role of an individual in conservation of natural resources

Unit III: Ecology and Ecosystem Introduction and Definition, Structure / Components of Ecosystems, Types of Ecosystems, Functional attributes of an ecosystem Productivity, Food chain relationships, Food Web, Ecological pyramids, Energy flow and Material Cycling

Unit IV: Biodiversity and its Conservation: Introduction and Definition Types of biodiversity, Biogeographical classification of India, Value of biodiversity, Hot spots of biodiversity, Threats to biodiversity, IUCN classification of species, Conservation of biodiversity-In-situ and Ex-situ conservation , Biosphere Reserves ,National Parks, Wild life Sanctuaries, Zoological Gardens, Botanical GardBanks, Tissue Culture etc.

Unit V: Environmental Pollution: Pollutants ,Types of pollutants, Effects of pollution on the environment, Types of environmental pollution, Air Pollution, Water Pollution ,Soil Pollution, NoisePollution, Thermal Pollution, Radioactive Pollution ,Solid waste management (Definition, causes ,effects and control of various pollution) Case studies Disaster management : flood, earthquake, cyclone, landslides

Unit VI: Social Issues and the Environment: Sustainable Development, Water Conservation and management, Rain water Harvesting, Climate change, Global warming, Acid Rain, Ozone layer depletion, Wastelands, wetland and their reclamation, Human population and the environment Environmental laws, Case studies

Recommended books:

Reference Books:

1. Dhameja ,S.K.(2005).Environmental Studies. Kataria and sons.
2. Kaushik A. & Kaushik C.P.(2010).Basics of Environment and Ecology. New Age International Publishers.
3. Singh. P.(2010).Environment and Ecology . New Age International Publishers.
4. De. A.K.(2002).Environmental Chemistry. New Age International Publishers.

Skill Enhancement Courses (SE)

SSEI-SE 01 Basics of Computer Applications

Course Outcome:

- The course is designed to teach students the theoretical and practical approach of information technology with the application of economic theories.

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: 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.