



**Centurion University of Technology &
Management, Odisha**

**B. A. (Hons.) Applied Economics
(Three Years Programme)**

School of Social Sciences

2019

Course Curriculum (B.A. (Hons.))

Program in Applied Economics

Course Objective

The three-year B.A. (Hons.) course in Applied Economics at Centurion University of Technology and Management, Odisha is designed to enable the students to develop the theoretical, analytical, and quantitative expertise to understand and evaluate economic theory to transfer their university experience to the world of work. The structure of the course is planned carefully so as to bridge the gap between theories of Economics and practice. Moreover, the industry oriented as well as skill based learning program will enable the students to stand distinguished in the field of Economics. The course will also help students to imbibe the skills necessary to enter into a wide range of careers. Some may prefer higher studies in Economics. Some others may wish to work as professional economists in the private or the public sector.

Eligibility Criteria

Students should have passed 12th Class or Intermediate in any subject stream with 50% marks from a Recognized Board. Candidates who have appeared for their 12th class or Intermediate final exams and are awaiting results are also eligible to apply. Final pass result should be produced at the time of joining the program, if selected.

Meeting the eligibility criteria will not ensure a seat. The admission will be strictly on the basis of merit as per rules. However, eligibility is a must for consideration of admission.

Award of Degree

On successful completion of 3 years (6 semesters) program, student will be eligible for a Bachelor in Arts (Applied Economics) Hons. A student is required to earn 151 credits over the period.

| Courses | Minimum Credits |
|---------------------------------------|-----------------|
| Foundation Course | 3 |
| Ability Enhancement Compulsory Course | 8 |
| Skill Enhancement Course | 8 |
| General Elective (Interdisciplinary) | 24 |
| Discipline (Core and Electives) | 72 +24 |
| Critical Thinking Seminar | 12 |
| Total | 151 |

Course Structure

Semester-I

| Code | Course | Course Type (Theory+ Practice+ Project) | Credit |
|----------|--|--|-----------|
| BAAE1101 | Introductory Microeconomics | 6+0+0 | 6 |
| BAAE1102 | Mathematics for Economics-I | 4+2+0 | 6 |
| | Ability Enhancement Compulsory Course-I | 4+0+0 | 4 |
| | General Elective (Interdisciplinary)-I | 6+0+0 | 6 |
| FCMG0115 | Human Rights | 1+0+0 | 1 |
| | Total Credits | | 23 |

Semester-II

| Code | Course | Course Type (Theory+ Practice+ Project) | Credit |
|----------|---|--|-----------|
| BAAE1201 | Introductory Macroeconomics | 6+0+0 | 6 |
| BAAE1202 | Mathematics for Economics-II | 4+2+0 | 6 |
| | Ability Enhancement Compulsory Course-II | 4+0+0 | 4 |
| | General Elective (Interdisciplinary)-II | 6+0+0 | 6 |
| FCMG0116 | Introduction to Ethics | 1+0+0 | 1 |
| | Total Credits | | 23 |

Semester-III

| Code | Course | Course Type (Theory+ Practice+ Project) | Credit |
|----------|---|--|-----------|
| BAAE2101 | Microeconomics and Applications | 6+0+0 | 6 |
| BAAE2102 | Critical Thinking Seminar | 0+0+6 | 6 |
| BAAE2103 | Statistical Methods For Economics | 4+2+0 | 6 |
| | Skill Enhancement Course-I | | 4 |
| | General Elective (Interdisciplinary)-III | 6+0+0 | 6 |
| FCMG0401 | Gender Issues in Development | 1+0+0 | 1 |
| | Total Credits | | 29 |

Semester-IV

| Code | Course | Course Type (Theory+ Practice+ Project) | Credit |
|----------|--|--|-----------|
| BAAE2201 | Macroeconomics and Applications | 6+0+0 | 6 |
| BAAE2202 | Critical Thinking Seminar | 0+0+6 | 6 |
| BAAE2203 | Basic Econometrics | 4+2+0 | 6 |
| | Skill Enhancement Course-II | | 4 |
| | General Elective (Interdisciplinary)-IV | 6+0+0 | 6 |
| | Total Credits | | 28 |

Semester-V

| Code | Course | Course Type Theory+ Practice+ Project) | Credit |
|----------|--|---|-----------|
| BAAE3101 | Indian Economy | 6+0+0 | 6 |
| BAAE3102 | Development Economics | 6+0+0 | 6 |
| | Discipline Specific Electives (DSE)-1 | 6+0+0 | 6 |
| | Discipline Specific Electives (DSE)-2 | 6+0+0 | 6 |
| | Total Credits | | 24 |

Semester-VI

| Code | Course | Course Type Theory+ Practice+ Project) | Credit |
|----------|--|---|-----------|
| BAAE3201 | Public Finance and Policy | 6+0+0 | 6 |
| BAAE3202 | Research Project | 0+0+6 | 6 |
| | Discipline Specific Electives (DSE)-1 | 6+0+0 | 6 |
| | Discipline Specific Electives (DSE)-2 | 6+0+0 | 6 |
| | Total Credits | | 24 |

| Group-I- Discipline Specific Electives (DSE) | | | |
|---|-----------------------------------|--------------------------------|---------------|
| Code | Course | Course Type (T+P+P) | Credit |
| AEDE0101 | Environmental Economics | 6+0+0 | 6 |
| AEDE0102 | Economics of Health and Education | 6+0+0 | 6 |
| AEDE0103 | Industrial Economics | 6+0+0 | 6 |
| AEDE0104 | International Trade | 6+0+0 | 6 |

| Group-II- Discipline Specific Electives (DSE) | | | |
|--|------------------------|--------------------------------|---------------|
| Code | Course | Course Type (T+P+P) | Credit |
| AEDE0201 | Agricultural Economics | 6+0+0 | 6 |
| AEDE0202 | Money and Banking | 6+0+0 | 6 |
| AEDE0203 | Financial Economics | 6+0+0 | 6 |
| AEDE0203 | Advanced Econometrics | 4+2+0 | 6 |

| List of Ability Enhancement Compulsory Courses | | | |
|---|---|--------------------------------|---------------|
| Code | Course | Course Type (T+P+P) | Credit |
| BAAE0101 | English | 4+0+0 | 4 |
| BAAE0102 | MIL (Alt. English/Oriya/Hindi) | 4+0+0 | 4 |
| BAAE0103 | Environmental Issues and Challenges | 4+0+0 | 4 |
| BAAE0104 | Indian Society: Continuities, Change, and Paradoxes | 4+0+0 | 4 |

| List of Skill Enhancement Courses (SEC) | | | |
|--|------------------------------------|--------------------------------|---------------|
| Code | Course | Course Type (T+P+P) | Credit |
| BASE0101 | Entrepreneurial Skills | 2+0+2 | 4 |
| BASE0102 | Computer in Social Science | 2+2+0 | 4 |
| BASE0106 | Quantitative Reasoning | 2+2+0 | 4 |
| BASE0104 | Communication and Development | 2+2+0 | 4 |
| BASE0105 | Data Base and Statistical Packages | 2+2+0 | 4 |

| List of General Elective Courses (GE) | | | |
|--|---|--------------------------------|---------------|
| Code | Course | Course Type (T+P+P) | Credit |
| BAGE0101 | Indian Society and Culture | 6+0+0 | 6 |
| BAGE0102 | Introduction to Cultural and Creative Expressions | 6+0+0 | 6 |
| BAGE0103 | Organizational Behavior | 6+0+0 | 6 |
| BAGE0107 | Indian Financial Markets and Services | 6+0+0 | 6 |
| BAGE0105 | Investment and Risk Management | 6+0+0 | 6 |
| BAGE0108 | Advertising & Consumer Behavior | 6+0+0 | 6 |

| List of Foundation Courses (FC) | | | |
|--|------------------------------|--------------------------------|---------------|
| Code | Course | Course Type (T+P+P) | Credit |
| FCMG0115 | Human Rights | 1+0+0 | 1 |
| FCMG0116 | Introduction to ethics | 1+0+0 | 1 |
| FCMG0401 | Gender Issues in Development | 1+0+0 | 1 |

Course Contents

Semester-I

Introductory Microeconomics

| Course Title | Code | Type of course | T-P-PJ |
|-----------------------------|----------|----------------|--------|
| Introductory Microeconomics | BAAE1101 | Theory | 6-0-0 |

Objective

- The purpose of Microeconomics is to give students a thorough understanding of the principles of economics
- To help students apply the functions of individual decision makers, both consumers and producers, within the larger economic system.

Learning outcome

- The students will be introduced to the different market structure, game theory, General equilibrium and Market failure.
- The students will acquire an appreciation for economic concepts in general.
- To develop in students the skill of using the basic economic concepts in day-to-day activities.

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100 % | |

Course outline

Module I: Exploring the subject matter of Economics

Why study economics? Scope and method of economics; the economic problem: scarcity and choice; the question of what to produce, how to produce and how to distribute output; prices, property rights and profits.

Module II: Supply and Demand

How Markets Work, Markets and Welfare Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; how prices allocate resources; elasticity and its application; controls on prices; taxes and the costs of taxation; consumer surplus; producer surplus

Module III: Theory of Consumer Behavior

The individual consumer's behavior in the market; Consumer preferences, utility functions, indifference curves and the consumer's budget; the consumer's optimization exercise; Budget constraint, consumption and income/price changes, demand for all other goods and price changes; Substitution and income effects. Non-utilitarian approaches - Revealed Preference.

Module IV: Production and Cost theory of the Firm

Technological relationships between inputs, isoquants and the use of production functions in firm operations; the concept of short-run and long-run cost curves and the optimization of profits and costs in firm production

Module V: The Firm and Market Structure

Behaviour of profit maximizing firms and the production process; short run costs and output decisions; costs and output in the long run. Imperfect Market Structure Monopoly and anti-trust policy; government policies towards competition; imperfect competition.

Text Books:

1. Karl E. Case and Ray C. Fair, Principles of Economics, Pearson Education Inc., 8th Edition, 2007.
2. N. Gregory Mankiw, Economics: Principles and Applications, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4th edition, 2007.
3. Joseph E. Stiglitz and Carl E. Walsh, Economics, W.W. Norton & Company,

Inc., New York, International Student Edition, 4th Edition, 2007.

4. Varian, Hal R. Intermediate Microeconomics: A Modern Approach, W W Norton and Company

Mathematics for Economics-I

| Course Title | Code | Type of course | T-P-PJ |
|-----------------------------|----------|------------------|--------|
| Mathematics for Economics-I | BAAE1102 | Theory+ Practice | 4-2-0 |

Objective

- Transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level.

Learning outcome

- Illustrate the method of applying mathematical techniques to economic theory in general

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100 % | |

Course outline

Module I: Preliminaries Sets and set operations

Relations; functions and their properties; Number systems; Types of functions- constant, polynomial, rational, exponential, logarithmic; Graphs and graphs of functions; Limit and continuity of functions; Limit theorems.

Module II: Derivative and integration of a function Rate of change and derivative

Derivative and slope of a curve; Continuity and differentiability of a function; Rules of differentiation for a function of one variable; Integration, formulas of Integration, Definite Integrals Application- Relationship between total, average and marginal functions.

Module III: Functions of two or more independent variables

Functions of two or more independent variables Partial differentiation techniques; Geometric interpretation of partial derivatives; Partial derivatives in Economics; Elasticity of a function–demand and cost elasticity, cross and partial elasticity.

Module IV: Matrices and Determinants Matrices:

Concept, types, matrix algebra, transpose, inverse, rank; Determinants: concept, properties, solving problems using properties of determinants, solution to a system of equations – Cramer's rule and matrix inversion method.

Text Books:

1. K. Sydsaeter and P. J. Hammond (2002): Mathematics for Economic Analysis. Pearson Educational Asia
2. A. C. Chiang and K. Wainwright (2005): Fundamental Methods of Mathematical Economics, McGraw Hill International Edition.
3. T. Yamane (2012): Mathematics for Economists, Prentice-Hall of India

Semester-II
Introductory Macroeconomics

| Course Title | Code | Type of course | T-P-PJ |
|-----------------------------|----------|----------------|--------|
| Introductory Macroeconomics | BAAE1201 | Theory | 6-0-0 |

Objective

- The purpose of this course is to give students a thorough understanding of the principles of Macro Economics that apply to the functions of individual decision makers, both consumers and producers, within the larger economic system.

Learning outcome

- The students will be introduced to the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variable like savings, investment, GDP, money and inflation.

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|-----------------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100 % | |

Course outline

Module I: Basic Concepts and Measurement of Macroeconomic Variables

Macro vs. Micro Economics; Why Study Macroeconomics? Limitations of Macroeconomics; Stock and Flow variables, Equilibrium and Disequilibrium, Partial and General Equilibrium Statics – Comparative Statics and Dynamics; National Income Concepts – GDP, GNP, NDP and NNP at market price and factor cost; Personal Income and Disposable personal Income; Real and Nominal GDP; Output, Income and Expenditure Approaches; Difficulties of Estimating National Income; Green Accounting.

Module II: Money Evolution and Functions of Money:

Quantity Theory of Money – Cash Transactions, Cash Balances and Keynesian Approaches, Value of Money and Index Number of Prices

Module III: Inflation, Deflation, Depression and Stagflation

Inflation – Meaning, Causes, Costs and Anti-Inflationary Measures; Classical, Keynesian, Monetarist and Modern Theories of Inflation; Deflation- Meaning, Causes, Costs and Anti Deflationary Measurers; Depression and Stagflation; Inflation vs. Deflation

Module IV: Determination of National Income The Classical Approach – Say’s Law

Theory of Determination of Income and Employment with and without saving and Investment; Basics of Aggregate Demand and Aggregate Supply and Consumption, Saving, Investment Functions; The Keynesian Approach – Basics of Aggregate Demand and Aggregate Supply and Consumption, Saving, Investment Functions; The Principle of Effective Demand; Income Determination in a Simple 2-Sector Model; Changes in Aggregate Demand and Income- The Simple Investment Multiplier; Income Determination in a 3-Sector Model with the Government Sector and Fiscal Multipliers

Text Books:

1. N. Gregory Mankiw (2010): Macroeconomics, 7th edition, Cengage Learning India Private Limited, New Delhi
2. Richard T. Froyen (2005): Macroeconomics, 2nd Edition, Pearson Education Asia, New Delhi.
3. Errol D’Souza (2009): Macroeconomics, Pearson Education Asia, New Delhi.
4. Shapiro E. (2012): Macroeconomics, Pearson Education Asia, New Delhi.
5. D. N.Dwivedi (2017): Macroeconomics, Pearson Education Asia, New Delhi.

Mathematics for Economics-II

| Course Title | Code | Type of course | T-P-PJ |
|------------------------------|----------|------------------|--------|
| Mathematics for Economics-II | BAAE1202 | Theory+ Practice | 4-2-0 |

Objective

- The objective of this sequence is to transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this Syllabus.

Learning outcome

- In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general.

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100 % | |

Course outline

Module I: Linear models

Input- Output Model: Basic concepts and structure of Leontief's open and static Input-Output model; solution for equilibrium output in a three industry model; the closed model.

Module II: Second and higher order derivatives

Technique of higher order differentiation; Interpretation of second derivative; Second order derivative and curvature of a function; Concavity and convexity of functions; Points of inflection; Differentials and derivatives - Total differentials; Rules of differentials; Total derivatives; Derivatives of implicit functions.

Module III: Single and multivariable optimization

Optimum values and extreme values; Relative maximum and minimum; Necessary versus sufficient conditions - First and Second derivative tests;

Economic applications thereof; First and second order condition for extremes of multivariable functions.

Module IV: Optimization with Equality Constraints

Effects of a constraint; Finding stationary value– Lagrange-Multiplier method (Two variable single constraint case only): First and second order condition; The Bordered Hessian determinant, Economic applications

Text Books:

1. K. Sydsaeter and P. J. Hammond (2002): Mathematics for Economic Analysis. Pearson Educational Asia
2. A. C. Chiang and K. Wainwright (2005): Fundamental Methods of Mathematical Economics, McGraw Hill International Edition.
3. T. Yamane (2012): Mathematics for Economists, Prentice-Hall of India

Semester-III

Microeconomics and Applications

| Course Title | Code | Type of course | T-P-PJ |
|---------------------------------|----------|----------------|--------|
| Microeconomics and Applications | BAAE2101 | Theory | 6-0-0 |

Objective

- The course is designed to provide a sound training in microeconomic theory to formally analyze the behavior of individual agents.

Learning outcome

- Since students are already familiar with the quantitative techniques in the previous semesters, mathematical tools are used to facilitate understanding of the basic concepts; this course looks at the behavior of the consumer and the producer and also covers the behavior of a competitive firm.

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100 % | |

Course outline

Module I: Consumer Theory I- Economic Models

Theoretical Model, Verification of Economic Model, General Feature of Economic Model, Development of Economic Theory of Value, Modern Developments; Preferences and Utility: Axioms of Rational Choice, Utility, Trades and Substitutions, The Mathematics of Indifference Curves, Utility Functions for Specific Preferences, The Many-Good case; Utility Maximization and Choice: The Two- Good Case (Graphical Analysis), The n-Good Case, Indirect Utility Function, The Lump Sum Principle, Expenditure Minimization, Properties of Expenditure Function

Module II: Consumer Theory II-Income and Substitution Effects

Demand Functions, Changes in Income, Changes in a Good's Price, The Individual's Demand Curve, Compensated (Hicksian) Demand Curves and Functions, Demand Elasticities; Consumer Surplus; Demand Relationships

among Goods: The Two-Good Case, Substitutes and Complements, Net (Hicksian) Substitutes and Complements, Substitutability with Many Goods, Composite Commodities, and Home Production, Attributes of Goods and Implicit Prices.

Module III: Production Theory:

Production with One Variable Input (labour) and with Two-Variable Inputs, Returns to Scale, Four Simple Production Functions (Linear, Fixed Proportions, Cobb-Douglas, CES), Technical Progress; Definition of Costs, Cost Functions and its Properties, Shift in Cost Curves, Cost in the Short-Run and Long-Run, Long-Run versus Short-Run Cost Curves, Production with Two Outputs – Economies of Scope

Module IV: Profit Maximization The Nature and Behavior of Firms

Profit Maximization, Marginal Revenue, Short-Run Supply by Price Taking Firm, Profit Functions and its Properties, Profit Maximization and Input Demand – Single-Input Case and Two-Input Case.

Text Books:

1. C. Snyder and W. Nicholson (2012): Microeconomic Theory: Basic Principles and Extensions, 11th Edition, Cengage Learning, Delhi, India.
2. R. S. Pindyck, D. N. Rubinfeld and P. L. Meheta (2009): Microeconomics, 7th Edition, Pearson, New Delhi.
3. H. R. Varian (2010): Intermediate Microeconomics: A Modern Approach, 8 th Edition,
4. W.W. Norton and Company/Affiliated East-West Press (India). The workbook by Varian and Bergstrom may be used for problems

Critical Thinking Seminar

| Course Title | Code | Type of course | L-T-PJ |
|---------------------------|----------|----------------|--------|
| Critical Thinking Seminar | BAAE2102 | Project | 0-0-6 |

Objective

- This course introduces the students to the recent happenings and how policies, programs, plans affect our day to day activities

Learning outcome

- The students will understand how economic policies affect our activities

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 100 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | | Written Examination |
| Total | | 100 % | |

Course outline

Course outline will be given on the basis of recent happenings

Statistical Methods for Economics

| Course Title | Code | Type of course | T- P-PJ |
|-----------------------------------|----------|------------------|---------|
| Statistical Methods For Economics | BAAE2103 | Theory+ Practice | 4-2-0 |

Objective

- This is a course on statistical methods for economics. It begins with some basic concepts and terminology that are fundamental to statistical analysis and inference.
- Helps the students to develop the notion of probability, followed by probability distributions of discrete and continuous random variables and of joint distributions. This is followed by a discussion on sampling techniques used to collect survey data.

Learning outcome

- The course introduces the notion of sampling distributions that act as a bridge between probability theory and statistical inference. The semester concludes with some topics in statistical inference that include point and interval estimation.

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100 % | |

Course outline

Module I: Data Collection, Measures of Central Tendency and Dispersion: Concepts
 Data Collection and Measures of Central Tendency and Dispersion Basic concepts: population and sample, parameter and statistic; Data Collection: primary and secondary data, methods of collection of primary data; Presentation of Data: frequency distribution; cumulative frequency; graphic and diagrammatic representation of data; Measures of Central Tendency: mean, median, mode, geometric mean, harmonic mean, their relative merits and demerits; Measures of Dispersion: absolute and relative - range, mean deviation, standard deviation, coefficient of variation, quartile deviation, their merits and demerits; Measures of Skewness and Kurtosis.

Module II: Correlation and Regression Analysis Correlation
 Scatter diagram, sample correlation coefficient - Karl Pearson's correlation coefficient and its properties, probable error of correlation coefficient, Spearman's rank correlation coefficient, Two variable linear regression

analysis - estimation of regression lines (Least square method) and regression coefficients - their interpretation and properties, standard error of estimate

Module III: Time Series and Index Number Time Series

Definition and components, measurement of trend- free hand method, methods of semi-average, moving average and method of least squares (equations of first and second degree only), measurement of seasonal component; Index Numbers: Concept, price relative, quantity relative and value relative; Laspeyer's and Fisher's index, family budget method, problems in construction and limitations of index numbers, test for ideal index number.

Module IV: Probability and Theoretical Distribution Probability

Basic concepts, addition and multiplication rules, conditional probability; Random variables and their probability distribution; Mathematical expectations; Theoretical Distribution: Binomial, Poisson and normal distribution - Properties and uses, problems using area under standard normal curve

Text Books:

1. Jay L. Devore (2010): Probability and Statistics for Engineering and the Sciences, Cengage learning,
2. S. C. Gupta (2010): Fundamentals of Statistics, Himalaya Publishing House, Delhi
3. Murray R. Spiegel: Theory & Problems of Statistics, Schaum's publishing Series.

Semester- IV
Macroeconomics and Applications

| Course Title | Code | Type of course | T-P-PJ |
|---------------------------------|-------------|-----------------------|---------------|
| Macroeconomics and Applications | BAAE2201 | Theory | 6-0-0 |

Objective

- In this course the students are introduced to the long run dynamic issues like growth and technical progress

Learning outcome

- It also provides the micro- foundations to the various aggregative concepts used in the previous course

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|-----------------------------|------------------|-------------------|-----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100 % | |

Course outline

Module I: Consumption, Income and Investment Functions

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

Module II: Demand for and Supply of Money Demand for Money

Classical, Neoclassical and Keynesian Approaches, The Keynesian Liquidity Trap and its Implications, Supply of Money – Classical and Keynesian Approaches, The Theory of Money Supply Determination and Money Multiplier, Measures of Money Supply in India

Module III: Aggregate Demand and Aggregate Supply Derivation

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

Module IV: Inflation, Unemployment and Expectations

Inflation, Unemployment and Expectations, and Trade Cycles Inflation – Unemployment Trade off and the Phillips Curve – Short run and Long run Analysis; Adaptive and Rational Expectations; The Policy Ineffectiveness Debate; Meaning and Characteristics of Trade Cycles; Hawtrey’s Monetary Theory, Hayek’s Over-investment Theory and Keynes’ views on Trade Cycles

Text Books:

1. N. Gregory Mankiw (2010): Macroeconomics, 7th edition, Cengage Learning India Private Limited, New Delhi
2. Richard T. Froyen (2005): Macroeconomics, 2nd Edition, Pearson Education Asia, New Delhi.
3. Errol D’Souza (2009): Macroeconomics, Pearson Education Asia, New Delhi

Critical Thinking Seminar

| Course Title | Code | Type of course | T-P-PJ |
|---------------------------|----------|----------------|--------|
| Critical Thinking Seminar | BAAE2202 | Project | 0-0-6 |

Objective

- This course is designed to help students learn the applications of economic theories into practice

Learning outcome

- The students will analyze, evaluate, and introspect different programs and policies

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 100 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | | Written Examination |
| Total | | 100 % | |

Course outline

The case lets will be from current happenings in India as well as world

Basic Econometrics

| Course Title | Code | Type of course | T-P-PJ |
|--------------------|----------|------------------|--------|
| Basic Econometrics | BAAE2203 | Theory+ Practice | 4+2+0 |

Objective

- To help students combine economics, mathematics, and statistics.

Learning outcome

- The students will be able to combine economics, mathematics, and statistics

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100 % | |

Course outline

Module I: Classical Linear Regression Model Types of Data

Classical Linear Regression Model Types of Data: Time Series, Cross Section and Panel Data. Concept of PRF and SRF. Estimation of the SRF using OLS. Analysis of variance and R squared. Assumptions of the model. Expectation and standard errors of the regression coefficients and the error term. Gauss Markov Theorem. Interval estimation and tests on population regression coefficients, variance of population disturbance term, and forecasts. Testing the significance of the model as a whole. Testing the normality assumption.

Module II: : Multiple Regression Model The three variable case

Multiple Regression Model The three variable case. Derivation of the coefficients and their properties. Interval estimation and coefficient and model significance. Correlations. Goodness of fit and the Adjusted R square. Hypothesis testing for significance of the contribution of a variable, structural stability, Restricted least squares

Module III: Functional Forms and Dummy Variables

Functional Forms and Dummy Variables: Regressions in deviation form and through the origin. The double log, semi-log, reciprocal, log reciprocal models

with applications. Intercept, Slope Dummy variables. Interaction between qualitative variables. Interaction between quantitative and qualitative variables. Use of dummy variables in testing for structural change and for seasonal indexes.

Module IV: Relaxing the Assumptions

Relaxing the Assumptions: Introduction to multicollinearity, heteroscedasticity, autocorrelation and specification errors. The nature of the problem, its detection and corrective measures.

Required Software Spreadsheet software and an econometric package such as STATA, SPSS

Text Books:

1. Christopher Dougherty, Introductory Econometrics 3rd Edition Oxford University Press (2007)
2. Gujarati ,Damodar : Basic Econometrics , 3rd edition Mc.Graw Hill, New Delhi (1995)
3. Ramanathan, Ramu : Introductory Econometrics With Applications. Thomson South Western (2002)
4. Pindyck ,Robert S. and Daniel L. Rubinfeld.— Econometric Models and Economic Forecasts.1. McGrawHill, 3rd Edition, Singapore (1997).
5. Wonnacott, R.J. and Wannacott, T.H: Econometrics , John Wiley. France (latest edition)

Semester-V
Indian Economy

| Course Title | Code | Type of course | T-P-PJ |
|----------------|----------|----------------|--------|
| Indian Economy | BAAE3101 | Theory | 6-0-0 |

Objective

- Using appropriate analytical frameworks, this course reviews major trends in economic indicators and policy debates in India in the post-Independence period, with particular emphasis on paradigm shifts and turning points

Learning outcome

- Given the rapid changes taking place in India, students will have knowledge about the changing scenario of Indian Economy

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|-----------------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100 % | |

Course outline

Module I: Introduction to Indian Economy British Rule:

Introduction to Indian Economy British Rule: exploitation and under development in India; features of Indian economy – natural resources, infrastructure, population

Module II: Population, Human Development and National Income

Population, Human Development and National Income: Demographic trends and issues; education; health and malnutrition; National Income in India trends, sectoral composition

Module III: Economic Planning in India Economic planning

Economic Planning in India Economic planning: Planning Commission and its functions, Planning exercises in India, Objectives, Strategies and achievements.

Module IV: Current Challenges Poverty

Current Challenges Poverty: definition and estimate, poverty line, poverty

alleviation programs; Inequality: income and regional inequality – causes and corrective measures; Unemployment: concepts, measurement, types, causes and remedies; Environmental challenges: Land, water and air

Text Books:

1. U. Kapila (2010): Indian economy since Independence. Academic Foundation, New Delhi
2. S. K. Misra and V. K. Puri (Latest Year): Indian Economy — Its Development Experience, Himalaya Publishing House, Mumbai
3. S. Chakraborty : Development Planning: The Indian Experience. Clarendon Press.
4. R. Dutt and K. P. M, Sundharam (Latest Year): Indian Economy, S. Chand & Company Ltd., New Delhi. Panagariya (2008): India: the Emerging Giant, Oxford University Press, New York
5. S. Acharya and R. Mohan (Eds.) (2010): India's Economy: Performance and Challenges, Oxford University Press, New Delhi.
6. J. Ahluwalia and I. M. D. Little (Eds.) (1998): India's Economic Reforms and Development: Essays for Manmohan Singh, Oxford University Press, New Delhi.

Development Economics

| Course Title | Code | Type of course | T-P-PJ |
|-----------------------|----------|----------------|--------|
| Development Economics | BAAE3102 | Theory | 6-0-0 |

Objective

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

Learning outcome

- The axiomatic basis for inequality measurement is used to develop measures of inequality and connections between growth and inequality are explored. The course helps the students to link political institutions to growth and inequality by discussing the role of the state in economic development and the informational and incentive problems that affect state governance.

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100 % | |

Course outline

Module I: Conceptions of Development Economic development

Conceptions of Development Economic development, Economic growth and development, Factors affecting economic development, Obstacles to economic development, Indicators of economic development - National income, Per capita income; Basic needs approach, PQLI, HDI, GDI, Capital formation and economic development, Vicious circle of poverty, circular causation. Alternative measures of development, documenting the international variation in these measures, comparing development trajectories across nations and within them.

Module II: Poverty and Inequality: Definitions, Measures and Mechanisms

Poverty and Inequality: Definitions, Measures and Mechanisms
Understanding Prosperity and Poverty: Geography, Institutions, and the Reversal of Fortune, Measuring Poverty, Inequality axioms; a comparison of commonly used inequality measures; connections between inequality and development; poverty measurement; characteristics of the poor; mechanisms that generate poverty traps and path dependence of growth processes

Module III: Political Institutions and the Functioning of the State Public Goods

Political Institutions and the Functioning of the State Public Goods and Economic Development, State ownership and regulation, government failures, Corruption and Development, The determinants of democracy; alternative institutional trajectories and their relationship with economic performance; within-country differences in the functioning of state institutions

Text Books:

1. Debraj Ray (2009): Development Economics, Oxford University Press.
2. Partha Dasgupta (2007): Economics: A Very Short Introduction, Oxford University Press.
3. Abhijit Banerjee, Roland Benabou and Dilip Mookerjee (2006): Understanding Poverty, Oxford University Press.
4. Amartya Sen (2000): Development as Freedom, OUP.
5. Daron Acemoglu and James Robinson (2006): Economic Origins of Dictatorship and Democracy, Cambridge University Press.
6. Robert Putnam (1994): Making Democracy Work: Civic Traditions in Modern Italy, Princeton University Press

Semester-VI

Public Finance and Policy

| Course Title | Code | Type of course | T-P-PJ |
|---------------------------|----------|----------------|--------|
| Public Finance and Policy | BAAE3201 | Theory | 6-0-0 |

Objective

- The paper deals with the nature of government intervention and its implications for allocation, distribution and stabilization. Inherently, this study involves a formal analysis of government taxation and expenditures.

Learning outcome

- The subject encompasses a host of topics including public goods, market failures and externalities and will thus help students gain knowledge of the theory of public economics and the other with the Indian public finances.

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100 % | |

Course outline

Module I: Introduction to Public Finance Public Finance

Introduction to Public Finance Public Finance: meaning and scope, distinction between public and private finance; public good versus private good; Principle of maximum social advantage; Market failure and role of government;

Module II Public Expenditure Meaning, classification

Public Expenditure Meaning, classification, principles, canons and effects, causes of growth of public expenditure, Wagner's law of increasing state activities, Peacock- Wiseman hypotheses

Module III: Public Revenue Sources of Public Revenue

Public Revenue Sources of Public Revenue; Taxation - meaning, canons and classification of taxes, impact and incidence of taxes, division of tax burden,

the benefit and ability to pay approaches, taxable capacity, effects of taxation, characteristics of a good tax system, major trends in tax revenue of central and state governments in India

Module IV: Public Budget and Public Debt Public Budget

Kinds of budget, economic and functional classification of the budget; Balanced and unbalanced budget; Balanced budget multiplier; Budget as an instrument of economic policy. Sources, effects, debt burden – Classical, Ricardian and other views, shifting - intergenerational equity, methods of debt redemption, debt management, tax versus debt;

Text Books:

1. Hindriks and G. Myles (2006): Intermediate Public Economics, MIT Press.
2. R. A. Musgrave and P. B. Musgrave (1989): Public Finance in Theory and Practices. McGraw Hill
3. B. P. Herber(1975): Modern Public Finance.
4. B. Mishra (1978): Public Finance, Macmillan India limited
5. Michael D. Bordo, Alan M. Taylor and Jeffrey G. Williamson (ed.) (2003): Globalization in Historical Perspective, University

Discipline Specific Elective (DSE) Papers
Group-I
Environmental Economics

| Course Title | Code | Type of course | T-P-PJ |
|-------------------------|----------|----------------|--------|
| Environmental Economics | AEDE0101 | Theory | 6-0-0 |

Objective

- The course focuses on economic causes of environmental problems.
- To help students understand how economic principles are applied to environmental questions and their management through various economic institutions, economic incentives and other instruments and policies.

Learning outcome

- The subject will help students understand Economic implications of environmental policy, valuation of environmental quality, quantification of environmental damages, tools for evaluation of environmental projects such as cost-benefit analysis and environmental impact assessments.

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|-----------------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100 | |

Course outline

Module I : **Introduction:** What is environmental economics; review of microeconomics and welfare economics.

Module II: **The Theory of Externalities:** Pareto optimality and market failure in the presence of externalities; property rights and the coase theorem.

Module III: **The Design and Implementation of Environmental Policy:** Overview; pigouvian taxes and effluent fees; tradable permits; choice between taxes and quotas under uncertainty; implementation of environmental policy.

Module IV: **International Environmental Problems:** Trans-boundary

environmental problems; economics of climate change; trade and environment.

Module V: Measuring the Benefits of Environmental Improvements: Non-Market values and measurement methods; risk assessment and perception.

Module VI: Sustainable Development: Concepts; measurement.

Text Books

1. Charles Kolstad, *Intermediate Environmental Economics*, Oxford University Press, 2nd edition, 2010.
2. Robert N. Stavins (ed.), *Economics of the Environment: Selected Readings*, W.W. Norton, 5th edition, 2005.
3. Roger Perman, Yue Ma, James McGilvray and Michael Common, *Natural Resource and Environmental Economics*, Pearson Education/Addison Wesley, 3rd edition, 2003.
4. Maureen L. Cropper and Wallace E. Oates, 1992, —Environmental Economics: A Survey, *Journal of Economic Literature*, Volume 30:675-740.

Economics of Health and Education

| Course Title | Code | Type of course | T-P-PJ |
|-----------------------------------|----------|----------------|--------|
| Economics of Health and Education | AEDE0102 | Theory | 6-0-0 |

Objective

- 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.

Learning outcome

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

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100% | |

Course outline

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

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

Module III: Evaluation of Health Programs: Costing, cost effectiveness and cost-benefit analysis; burden of disease.

Module IV: Health Sector in India: An Overview Health outcomes; health systems; health financing.

Module V: 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.

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

Text Books

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 Labor Economics: Theory and Public Policy, Addison Wesley, 2000

Industrial Economics

| Course Title | Code | Type of course | T-P-PJ |
|----------------------|----------|----------------|--------|
| Industrial Economics | AEDE0103 | Theory | 6-0-0 |

Objective

- To give an idea on various aspects and strategic interaction between firms. After the completion of course, the students will be able to describe and explain the determinants of the size and structure of firms, pricing behavior, basic determinants of market structure and the key issues in competition policy and regulation.

Learning outcome

- The students will be able to describe and explain the determinants of the size and structure of firms, pricing behavior, basic determinants of market structure and the key issues in competition policy and regulation

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100% | |

Course outline

Module I: Theory of firm: Size and structure of firms-the technological view of the firm, the transaction costs-property rights approach; separation of ownership and control

Module II: Firm conduct and market structure: Short-run price competition: the Bertrand model, Bertrand competition with capacity constraints, the Cournot model. Dynamic price competition, entry deterrence and entry accommodation.

Module III: Price discrimination, Vertical restraints, the determinants of market structure: theory of market structure in exogenous and endogenous sunk cost industries, technology and market structure

Module IV: Competition policy: Competition and industrial policy. Role of competition commission of India. Industrial policies.

Module V: Regulations: regulation of firms with market power under symmetric information, regulation under asymmetric information, liberalization and regulation.

Suggested Readings

1. Tirole, J. The Theory of Industrial Organization. (Cambridge, MA: MIT Press)
2. Church, J.R. and R. Ware Industrial Organization: A Strategic Approach. (Irwin McGraw-Hill)
3. Sutton, J. Sunk Costs and Market Structure. (Cambridge, MA: MIT Press)
4. Armstrong, M., S. Cowan and J.Vickers. Regulatory Reform. (Cambridge, MA: MIT Press)

International Trade

| Course Title | Code | Type of course | T-P-PJ |
|---------------------|----------|----------------|--------|
| International Trade | BAAE3201 | Theory | 6-0-0 |

Objective

- To develop a systematic exposition of models that try to explain the composition, direction, and consequences of international trade, and the determinants and effects of trade policy.
- To build on the models of open economy macroeconomics developed in previous courses, focusing on national policies as well as international monetary systems.

Learning outcome

- The subject will help students understand the causes and consequences of the rapid expansion of international financial flows in recent years. Although the course is based on abstract theoretical models, students will also be exposed to real-world examples and case studies.

Evaluation Systems

Key points: State clearly the components, weights and methods of evaluation system.

| Internal Examination | Component | % of Marks | Method of Assessment |
|-----------------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100% | |

Course outline

Module I: Introduction: What is international economics about? An overview of world trade.

Module II: Theories of International Trade The Ricardian, specific factors, and Heckscher-Ohlin models; new trade theories; the international location of production; firms in the global economy-outsourcing and multinational enterprises.

Module III: Trade Policy Instruments of trade policy; political economy of trade policy; controversies in trade policy. 4. International Macroeconomic Policy Fixed versus flexible exchange rates; international monetary systems; financial globalization and financial crises.

Text Book:

1. Paul Krugman, Maurice Obstfeld, and Marc Melitz, International Economics: Theory and Policy, Addison-Wesley (Pearson Education Indian Edition), 9th edition, 2012.
2. Dominick Salvatore, International Economics: Trade and Finance, John Wiley International Student Edition, 10th edition, 2011.

Discipline Specific Elective (DSE) Papers

Group-II

Agricultural Economics

| Course Title | Code | Type of course | T-P-PJ |
|------------------------|----------|----------------|--------|
| Agricultural Economics | AEDE0201 | Theory | 6-0-0 |

Objective

- The course is a branch of economics that deals with the distribution, management and productivity of land.

Learning outcome

- After the completion of course, a student will be able to understand the nature and scope of agricultural economics, technological, marketing issues in agriculture and many more

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100% | |

Course outline

Module I: Introduction to agricultural economics: Nature and Scope of agricultural economics. Factors: technological, institutional and general, affecting agricultural development. Interlinkage between agriculture and industry.

Module II: Concept of production function: input-output and product relationship in farm production

Module III: Growth and productivity trends in Indian agriculture: Agrarian reforms and their role in economic development. New agricultural policy.

Module IV: Relationship between system of farming, farm size and productivity in Indian

agriculture. New agricultural strategy and green revolution and its impact

Module V: Emerging trends in production, processing, marketing and exports; policy controls and regulations relating to industrial sector with specific reference to agro-industries in agribusiness enterprises.

Text Books

1. Sadhu An, Singh Amarjit and Singh Jasbir (2014), Fundamentals of Agricultural Economics, Himalaya Publishing House, Delhi
2. Lekhi RK and Singh Joginder, Agricultural Economics, Kalyani Publishers
3. Bhaduri, A. (1984), The Economic Structure of Backward Agriculture, Macmillan, Delhi.
4. Bilgrami, S.A.R. (1996), Agricultural Economics, Himalayas publishing house, Delhi.
5. Dantwala, M.L. et.al (1991), Indian Agricultural Development since Independence, Oxford & IBH, New Delhi.

Money and Banking

| Course Title | Code | Type of course | T-P-PJ |
|-------------------|----------|----------------|--------|
| Money and Banking | AEDE0202 | Theory | 6-0-0 |

Objective

- To expose students to the theory and functioning of the monetary and financial sectors of the economy.
- It highlights the organization, structure and role of financial markets and institutions. It also discusses interest rates, monetary management and instruments of monetary control.

Learning outcome

- The subject will help students understand Financial and banking sector reforms and monetary policy with special reference to India

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100% | |

Course outline

Module I: Money Concept, functions, measurement; theories of money supply determination.

Module II: Financial Institutions, Markets, Instruments and Financial Innovations
 a. Role of financial markets and institutions; problem of asymmetric information – adverse selection and moral hazard; financial crises. b. Money and capital markets: organization, structure and reforms in India; role of financial derivatives and other innovations.

Module III: Interest Rates Determination; sources of interest rate differentials; theories of term structure of interest rates; interest rates in India.

Module IV: Banking System a. Balance sheet and portfolio management. b. Indian banking system: Changing role and structure; banking sector reforms.

Module IV: Central Banking and Monetary Policy Functions, balance sheet; goals, targets, indicators and instruments of monetary control; monetary management in an open economy; current monetary policy of India.

Text Books

1. F. S. Mishkin and S. G. Eakins, Financial Markets and Institutions, Pearson Education, 6th edition, 2009.
2. F. J. Fabozzi, F. Modigliani, F. J. Jones, M. G. Ferri, Foundations of Financial Markets and Institutions, Pearson Education, 3rd edition, 2009.
3. M. R. Baye and D. W. Jansen, Money, Banking and Financial Markets, AITBS, 1996.
4. Rakesh Mohan, Growth with Financial Stability- Central Banking in an Emerging Market, Oxford University Press, 2011.

Financial Economics

| Course Title | Code | Type of course | T-P-PJ |
|---------------------|----------|----------------|--------|
| Financial Economics | AEDE0203 | Theory | 6-0-0 |

Objective

- This course introduces students to the economics of finance.
- To help students understand some of the basic models used to benchmark valuation of assets and derivatives are studied in detail; these include the CAPM, and the Binomial Option Pricing models.

Learning outcome

- The subject will help students understand the concepts of economics of finance.

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100% | |

Course outline

Module I: Investment Theory and Portfolio Analysis:

a. Deterministic cash-flow streams Basic theory of interest; discounting and present value; internal rate of return; evaluation criteria; fixed- income securities; bond prices and yields; interest rate sensitivity and duration; immunization; the term structure of interest rates; yield curves; spot rates and forward rates. b. Single-period random cash flows Random asset returns; portfolios of assets; portfolio mean and variance; feasible combinations of mean and variance; mean-variance portfolio analysis: the Markowitz model and the two-fund theorem; risk-free assets and the one-fund theorem. c. CAPM The capital market line; the capital asset pricing model; the beta of an asset and of a portfolio; security market line; use of the CAPM model in investment analysis and as a pricing formula.

Module II: Options and Derivatives: Introduction to derivatives and options; forward

and futures contracts; options; other derivatives; forward and future prices; stock index futures; interest rate, futures; the use of futures for hedging;

duration-based hedging strategies; option markets; call and put options; factors affecting option prices; put-call parity; option trading strategies; spreads; straddles; strips and straps; strangles; the principle of arbitrage; discrete processes and the binomial tree model; risk-neutral valuation.

Module III: Corporate Finance Patterns of corporate financing: Common stock; debt; preferences; convertibles; Capital structure and the cost of capital; corporate debt and dividend policy; the Modigliani Miller theorem.

Text Books

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

Advanced Econometrics

| Course Title | Code | Type of course | T-P-PJ |
|-----------------------|----------|------------------|--------|
| Advanced Econometrics | AEDE0203 | Theory+ Practice | 4-2-0 |

Objective

- The aim of this course is to provide a foundation in applied econometric analysis and develop skills required for empirical research in economics.
- To help students understand topics include specification and selection of regression models, dynamic econometric models, advanced methods in regression analysis and panel data models.

Learning outcome

- Since the emphasis is on application of methods, this course requires understanding of econometric software and computing skills.

Evaluation Systems

| Internal Examination | Component | % of Marks | Method of Assessment |
|----------------------|--------------|------------|----------------------------|
| | Midterm Test | 40 % | Written Examination |
| | Assignment | | Report and Presentation |
| | Experiments | | Lab Work, Report |
| | Project | | Report and Presentation |
| | Quiz | | Surprise/Preannounced Ones |
| External Examination | | 60 % | Written Examination |
| Total | | 100% | |

Course outline

Module I: Stages in Empirical Econometric Research

Module II: Regression Diagnostics and Specification Misspecification; functional forms; model selection.

Module III: Advanced Topics in Regression Analysis Selected Topics: Dynamic Econometric Models: distributed lag models; autoregressive models; instrumental variable estimation; simultaneous equation models.

Module IV: Data Models Methods of estimation; fixed effects model; random effects model.

Module V: Introduction to Econometric Software Package SPSS, E-VIEWS; STATA (any one).

Text Books :

1. Jeffrey M. Wooldridge, Econometrics, CENGAGE learning, India Edition, 2009.
2. Dimitrios Asteriou and Stephen Hall, Applied Econometrics: A Modern Approach, Palgrave Macmillan, 2007.
3. Damodar Gujarati, Econometrics by Example, Palgrave Macmillan, 2011.