

## BACHELOR OF ECONOMICS WITH RESEARCH

FOURTH YEAR	VII	DSC	Advanced Microeconomics-I	Theory	4
		DSE 1	Advanced Public Finance-I	Theory	4
		DSE 2	Research Methodology-I	Theory	4
		DSE 3	Mathematical Economics	Theory	4
		GE 1	Labour Economics-I	Theory	4
		GE 2	Agriculture Economics-I	Theory	4
		GE 3	Indian Economy-I	Theory	4
		GE 4	Cultural Economics-I	Theory	4
		Academic Project	Academic Project	Practical	6
	VIII	DSC	Advanced Macroeconomics-I	Theory	4
		DSE 1	Advanced Public Finance-II	Theory	4
		DSE 2	Research Methodology-II	Theory	4
		DSE 3	Advanced Statistics	Theory	4
		GE 1	Labour Economics-II	Theory	4
		GE 2	Agriculture Economics-II	Theory	4
GE 3		Indian Economy-II	Theory	4	
GE 4		Cultural Economics-II	Theory	4	
DISSERTATION	Dissertation on Major/Dissertation on Minor	Practical	6		

Signature

Page

Date

Signature



	Marshallian and Hicksian Demand Functions. <b>Consumer Surplus:</b> Definition, Importance, and Calculation, Applications in Economic Analysis. Revealed Preference Hypothesis, Hicksian Revisions. <b>Consumer Choice under Uncertainty:</b> Simple Lottery, Compound Lottery, Definitions of Risks Aversion, Risk Lover & Risk neutral, Von Neumann-Morgenstern's Expected Utility Theory, Certainty Equivalent, Concavity of utility function and Measures of Risk Aversion.	
II	<b>Production Theory:</b> Overview of Production Functions, Short-Run vs. Long-Run Production Functions. <b>Theories of Production:</b> Law of Variable Proportions, Returns to Scale: Increasing, Constant, and Decreasing Returns. Isoquants: Definition and Interpretation, Marginal rate of technical substitution, Elasticity of Substitution. <b>Optimal Factor Combination:</b> Equilibrium of the Firm, Choosing the Optimal Combination of Production Factors. <b>Production Function:</b> Cobb Douglas, Constant Elasticity of Substitution (CES), Variable Elasticity of Substitution (VES), The Role of Technical Progress in Shaping Production Functions, Impact of Technological Advancements on Production Efficiency. Producer's Equilibrium and Input supply functions.	16
III	<b>Cost and Revenue Functions:</b> Short run and long run cost, Marginal and Average Cost Concepts. <b>Traditional and Modern Theories of Costs:</b> Examination of Traditional Cost Theories, Overview of Modern Approaches to Cost Analysis. Definition of Iso-cost curve, Scale Lines and Ridge Lines. <b>Derivation of Cost Curves from Production Functions:</b> Understanding the Relationship Between Production Functions and Cost Curves. <b>Economies of Scale:</b> Definition and Types, Impact on Long-Run Average Cost Curves. <b>Cost Structures:</b> Fixed Costs vs. Variable Costs, Economies and Diseconomies of Scale. Analysis of Cost Behavior over different Time Horizons. <b>Revenue Concepts:</b> Understanding the relations between Revenue Curves (Average Revenue (AR), Marginal Revenue (MR), and Total Revenue (TR)).	16
IV	<b>Competitive Markets -Perfect Competition:</b> Introduction to Market Structures and Perfect Competition – Definition, Market Equilibrium and Equilibrium of a firm under Perfect Competition (Short Run & Long Run), Shut Down Point, Break-Even Point, AVC and Supply Curve. <b>Tax Incidence Analysis:</b> Understanding how taxes affect market prices and consumer behaviour, Analysis of the distribution of tax burdens between consumers and producers. <b>Price Controls and Their Effects:</b> Overview of government-imposed price controls, including price ceilings and floors, Discussion of the consequences of these controls on market efficiency and resource allocation.	12

**Semester VII**

**Bachelor of Economics with Research**

**DISCIPLINE SPECIFIC ELECTIVE (DSE)- Advanced Public Finance-I**

**No. of Hours-60**

**CREDIT DISTRIBUTION, ELIGIBILITY, PRE-REQUISITES OF THE COURSE**

Course Title	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisites of the course (if any)
		Theory	Tutorial	Practical/Practice		
DSE: Advanced Public Finance-I	4	3	1	0	Passed Bachelor of Economics	Nil

**Bachelor of Economics with Research**

Programme : Bachelor of Economics with Research

Year IV

Semester VII  
Paper II (a)

Subject : Economics

Course Code: ECODSE701

Course Title : Advanced Public Finance-I

**Course Outcomes:** The course will help students to:

- Understand and analyze the impact of public finance on allocation of resources and the distribution of income.
- Learn about public expenditure, taxation and debt issues in the economy.

**Credits : 4 Credits**

Unit	Topics	Discipline Specific Elective	No. Of Lecture
I	Meaning, Scope & Importance of Public finance. The Principle of Maximum Social Advantage, View of Mrs. Hicks: Production Optimum, Utility Optimum, Major Fiscal Functions, Public goods, Private goods & Merit goods and Externalities. Coase Theorem Functional and Activating finance.		15
II	Public Expenditure: Wagner's law of Increasing State Activities; Wiseman- Peacock's Hypothesis; Principles of public expenditure, Reasons for increasing in Public Expenditure. Evaluation of Public Expenditure.		12
III	Public Revenue: Structure and Finance. Principles of Taxation. Incidence, Impact and Shifting of Taxation. Effects of a Taxation. Direct Vs Indirect Taxes, GST: CGST, -SGST, IGST. Tax Evasion, Tax Avoidance and Corruption. Incidence under Perfect Competition and		18

*Handwritten signatures and notes:*  
 Zuber  
 Prof. [Signature]  
 [Signature]  
 [Signature]

	Monopoly. Income Tax (individual and corporation), Wealth Tax, Death Duty and Law of Returns. Taxable Capacity. Theory of Optimal Taxation.	
<b>IV</b>	Public Debt: Objectives, Sources, Composition and Ownership. Debt Vs Tax, Debt Burden, Effects and Types of Public Debt, Repayment and Debt Management.	15

**Essential Reading:**

1. Singh, S. K., Public Finance in Theory and Practice, S. Chand, New Delhi.
2. Bhatia, H.L., Public Finance, Vikas Publishing House, New Delhi.
3. Musgrave, R.A. and Musgrave P.B., Public Finance in Theory and Practice, McGraw Hill, New York.
4. Bagchi, A., Readings in Public Finance, Oxford University Press
5. Prest, A.R. and Barr, N.A., Public Finance in Theory and Practice, ELBS, London.
6. Buchanan, J.M., Public Finance, Irwin, New York.
7. Herber, B.P., Modern Public Finance, AITBS, New Delhi.

**Recommended /Additional Reading:**

1. Prest, A. R., Public Finance in Under-developed Countries, Vikas, New Delhi.
2. Buchanan, J.M., Public Principles of Public Debt, Irwin, Homewood. Ill., USA.
3. Kumar, Arun, The Black Economy in India, Penguin Random House India
4. Chattopadhyay, Saumen, Macroeconomics of Black Economy, Orient Blackswan
5. Reserve Bank of India, Monthly Bulletins.
6. Budget Papers of the Government of India.
7. Recent Budget of India

**Suggested online link :**

[www.ignou](http://www.ignou)  
[www.swayam](http://www.swayam)  
[www.inflibnet](http://www.inflibnet)

*Pay*      *Amis*      *सोमनाथ*  
*Sunder*      *Boyle*      *B*

**Semester VII**

**Bachelor of Economics with Research**

**DISCIPLINE SPECIFIC ELECTIVE (DSE)- Research Methodology-I**

No. of Hours-60

**CREDIT DISTRIBUTION, ELIGIBILITY, PRE-REQUISITES OF THE COURSE**

Course Title	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisites of the course (if any)
		Theory	Tutorial	Practical/Practice		
DSE: Research Methodology-I	4	3	1	0	Passed Bachelor of Economics	Nil

**Bachelor of Economics with Research**

Programme : Bachelor of Economics with Research	Year IV	Semester VII
		Paper II (b)

Subject : Economics

Course Code: ECODSEM702	Course Title : Research Methodology-I
-------------------------	---------------------------------------

**Course Outcomes:** The course will help students to:

- Learn research methodology in the social sciences and its implications.
- Learn data collection, data analysis and statistical hypothesis testing.

Credits : 4 Credits	Discipline Specific Elective
---------------------	------------------------------

Unit	Topics	No. Of Lecture
I	Research: Meaning, Objectives, Types, Need and Significance. Research Methods vs Research Methodology. Preparation of a Research Proposal. Formulation of a Research Design. Framing of Objectives and Hypotheses. Review of Literature. Methods of Research Proposal.	15
II	Research Hypothesis: Definition, Characteristics, Sources and Importance. Problems in formulating Hypothesis, Statistical Hypotheses - Simple and Composite, Null Vs Alternative Hypotheses, prerequisites for testing of Hypotheses, Testing of Hypotheses, Goodness of Fit, Types of errors in testing of Hypotheses and Level of Significance.	15

*Handwritten signatures and notes:*  
 Includes  
 Ray  
 Ray  
 Ray

III	Data Collection and Processing: Methods of collecting Primary and Secondary data; Limitations of Secondary Data, Precautions in the use of Secondary Data. Sampling techniques: Sample size, and problems in Sampling. Different tools of Data Collection. Designing of a Questionnaire and difference between Questionnaire & Schedule. Sampling frame and Sample Selection.	15
IV	Preparation for Analysis, Editing, Coding, Classification of Data. Qualitative and Quantitative Data. Tabulation, Construction of Frequency Table, Types of Tables, Format of a simple one-way table, three-way table. Presentation of Data: Graphs, Charts, Diagrams. Statistical Analysis of Data: Descriptive statistics. Measures of Central Tendency (Mean, Median, Mode) & Dispersion (Standard Deviation and Coefficient of Variation). Correlation and Regression Analysis: Use of Statistical Package(s): STATA, R, SPSS and MS-Excel.	15

**Essential Reading:**

1. Cauvery, R., et.al., Research Methodology, S. Chand, New Delhi.
2. Sharma, Manoj, Research Methodology, Anmol Publications, New Delhi, 2004.
3. R.N. Trivedi & D.P. Shukla : Research Methodology ( in Hindi).
4. Kothari, C.R.: Research Methodology.
5. Tandon : Research Methodology in Social Sciences.
6. पारस राय, अनुसंधान परिचय।
7. एच० के कपिल, अनुसंधान विधियां, एच०पी० भार्गव बुक हाऊस आगरा

**Recommended /Additional Reading:**

1. Paul Wright, Qualitative Research and Evaluation, Jones & Bartlett Learning
2. D.N. Gujrati, Basic Econometrics, McGraw Hill Publication
3. K. Sydsaeter and P.J. Hammond, Mathematics for Economic Analysis, Pearson.
4. Yojna. Monthly Magazine.
5. Economic Times, Financial Express and other Newspapers.
6. Economic Magazines.
7. Reports of various agencies.

**Suggested online link :**

[www.ignou](http://www.ignou)  
[www.swayam](http://www.swayam)  
[www.inflibnet](http://www.inflibnet)

पाय अरुप  
 एंडर रायल B  
 एम.के. मेहता

**Semester VII**

**Bachelor of Economics with Research**

**DISCIPLINE SPECIFIC ELECTIVE (DSE)- Mathematical Economics**

**No. of Hours-60**

**CREDIT DISTRIBUTION, ELIGIBILITY, PRE-REQUISITES OF THE COURSE**

Course Title	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisites of the course (if any)
		Theory	Tutorial	Practical/Practice		
DSE: Mathematical Economics	4	3	1	0	Passed Bachelor of Economics	Nil

**Bachelor of Economics with Research**

Programme : Bachelor of Economics with Research		Year IV	Semester VII Paper II (c)
Subject : Economics			
Course Code: ECODSE703		Course Title : Mathematical Economics	
<b>Course Outcomes:</b> The course will help students to: <ul style="list-style-type: none"> <li>Analyze and apply key economic functions and their implications.</li> <li>Perform matrix operations and solve linear equations using determinants.</li> <li>Apply differentiation and integration to optimize economic models.</li> <li>Utilize input-output analysis, linear programming, and game theory in economic decision-making.</li> </ul>			
Credits : 4 Credits		Discipline Specific Elective	
Unit	Topics	No. Of Lecture	
I	<b>Functions in Economic Analysis</b> Types of Functions: Overview of Different Types of Functions, Introduction to Economic Functions: Revenue, Cost, Demand, and Supply Functions. <b>Convex and Concave Functions:</b> Characteristics of Convex and Concave Functions, Implications for Economic Models. <b>Multivariable Functions:</b> Introduction to Multivariable Functions. <b>Types of Production Functions:</b> Homogeneous and Homothetic Functions	15	
II	<b>Linear Algebra, Matrix and Determinants</b> Introduction to Linear Algebra: Key Concepts and Terminology in Linear Algebra. <b>Matrix Operations:</b> Addition, Subtraction, and Scalar Multiplication & Multiplication of Matrix. <b>Properties in Matrix Operations:</b> Commutative, Associative, and Distributive laws. Types of	15	

*Handwritten signature*

*Handwritten signature*

*Handwritten signature*

	<p>Matrix Determinants and Their Properties: Introduction to Determinants and Non-singularity, Evaluation of Third Order Determinants, Minors and Cofactors, Laplace Expansion and Properties of Higher Order Determinants</p> <p>Matrix Inversion and Applications: Understanding Co-factor and Adjoint Matrices, Calculating Inverse Matrices and Their Role in Solving Linear Equations, Application of Cramer's Rule and Cramer Method for Matrix Inversion</p>	15
III	<p>Differentiation: Rules of Differentiation, Derivatives vs. Differential, First and Second Order Derivatives, Applications of Second Order Derivatives, Optimization Problems: Identifying Maximum and Minimum Values, Application of Differential Calculus in Economics.</p> <p>Integration: Elementary Integration, Difference Equations of First and Second Order, Simple Applications of Integral Calculus in Economics.</p>	15
IV	<p>Input-Output Analysis, Linear Programming &amp; Game Theory</p> <p>Input-Output Analysis: Understanding Open and Closed Economic Systems, Analyzing Interdependencies Between Different Sectors.</p> <p>Linear Programming: Introduction to Primal and Dual Problems in Linear Programming, Solving Linear Programming Problems Using Graphical and Simplex Methods.</p> <p>Game Theory Fundamentals: Key Terminology and Concepts in Game Theory, Exploring Strategic Form Games and Identifying Dominant Strategies.</p>	15

**Essential Readings:**

1. A.C. Chiang: *Fundamental Methods of Mathematical Economics*, McGraw Hill
2. Stoklosa, K and P Hamann: *Essential Mathematics for Economic Analysis*, Pearson Publications
3. Roy, M., Livernois, J., McKenna, C., Rees, R., Stengos, T. (2001). *Mathematics for Economics*.
4. R.C. Mehta & G.M.K. Mathani, (2008) *Mathematics for Economics*, Sultan Chand & Sons.

**Recommended / Additional Readings:**

1. Dowling, Edward T. (2004) *Introduction to Mathematical Economics*, 3rd Ed. McGraw-Hill.
2. Alter, R.H. *Mathematical analysis for economics*, A.I.
3. Dixit, A.K. (1984) *Optimization in Economic Theory*, 2nd Edition, Oxford University Press.
4. Dowling, Edward T. (1982) *Schaum's Outline of Theory and Problems of Mathematics for Economists*, McGraw-Hill.
5. Silberberg, E. (1980) *The Structure of Economics - a Mathematical Analysis*, McGraw-Hill, 1980.

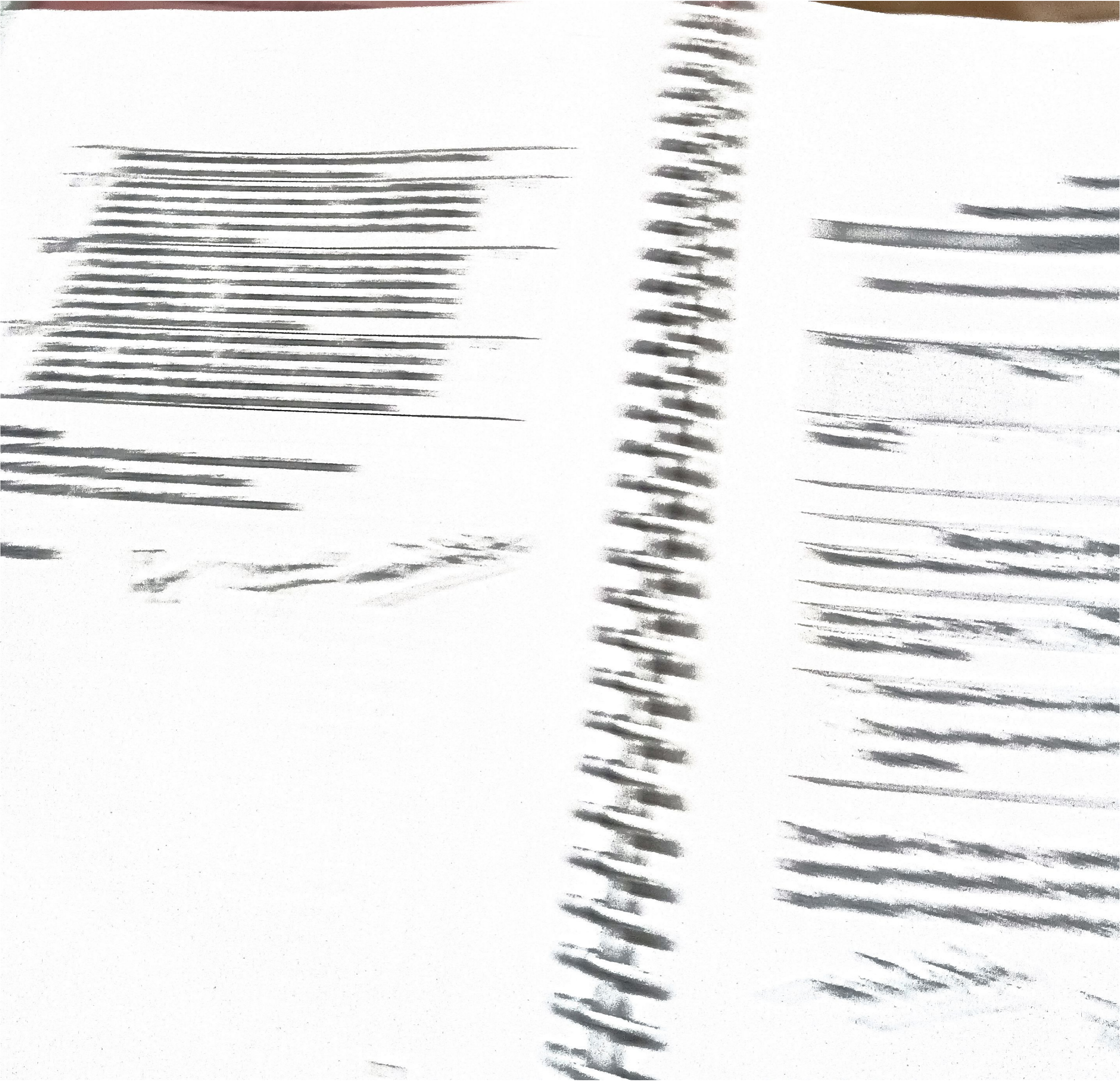
*[Handwritten signature]*

*Page*

*Amir*

*Rajib*

*[Handwritten mark]*



**Semester VIII**

**Bachelor of Economics with Research**

**DISCIPLINE SPECIFIC COURSE (DSC)- Advanced Macroeconomics-I**

**No. of Hours-60**

**CREDIT DISTRIBUTION, ELIGIBILITY, PRE-REQUISITES OF THE COURSE**

Course Title	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisites of the course (if any)
		Theory	Tutorial	Practical/Practice		
DSC: Advanced Macroeconomics-I	4	3	1	0	Passed Bachelor of Economics	Nil

<b>Bachelor of Economics with Research</b>		
<b>Programme : Bachelor of Economics with Research</b>	<b>Year IV</b>	<b>Semester VIII Paper I</b>
<b>Subject : Economics</b>		
<b>Course Code: ECODSC801</b>	<b>Course Title: Advanced Macroeconomics-I</b>	
<b>Course Outcomes:</b> The students will learn about - <ul style="list-style-type: none"> <li>• National Income and its measurement.</li> <li>• Theories of output and employment and consumption function.</li> <li>• Investment multiplier and acceleration principle.</li> </ul>		
<b>Credits :4 Credits</b>		<b>Discipline Specific Course</b>
<b>Unit</b>	<b>Topics</b>	<b>No. Of Lecture</b>
I	National Income and Related Concepts. Circular flow of Income. Measurement of National Income. Problems in the Measurement of National Income.	15
II	Types of Macroeconomics, Say's Law of Market, Determination of the level of Output and Employment, Classical and Keynesian Economics.	15
III	Post-Keynesian Approaches, Theory of Output and Employment. Consumption Function, Saving Function and Investment Function - Keynesian approach. Keynesian Psychological Law of Consumption. Kalecki Approach, Theories of Consumption Function: Absolute Income Hypothesis, Relative Income Hypothesis, Permanent Income Hypothesis & Life Cycle Hypothesis. Paradox of Thrift.	18

<b>IV</b>	Investment Function- Determinants of Investment. Concept of Investment Multiplier, Tax cut multiplier, Balanced Budget Multiplier, Foreign Trade Multiplier and Acceleration Principle.	12
-----------	---	----

**Essential Reading:**


1. Vaish, M.C., Macroeconomic Theory, Vikas, New Delhi.
2. Romer, D.L., Advanced Macroeconomics, Mc Graw Hill, New York.
3. O. Blanchard and D.R. Johnson, Macroeconomics, Pearson.
4. Ackley, G., Macroeconomics: Theory and Policy, Macmillan, New York
5. Dornbusch, R. and F. Stanley, Macroeconomics, Mc Graw Hill, New York.
6. Rana K.C. and K.N. Verma, Macro Economic Analysis, Vishal Publishing Co. Jalandhar.
7. एम0 एल0 झिंगन, समष्टि अर्थशास्त्र, वृन्दा पब्लिकेशन, नई दिल्ली।
8. एच0 एल0 आहूजा, उच्चतर समष्टि अर्थशास्त्र, एस0 चौद, नई दिल्ली।

**Recommended /Additional Reading:**

1. O. Blanchard, Macroeconomics, Pearson.
2. M. Kalecki, Political Aspects of Full Employment.
3. Jha, R., Contemporary Macroeconomic Theory and Policy, Wiley Eastern, New Delhi.
4. Gupta, S.B., Monetary Planning in India, OUP, New Delhi.
5. Reddy, Y.V., A Review of Monetary and Financial Sector Reforms in India, UBSPD, New Delhi.
6. Frisch, H., Theories of Inflation, Cambridge University Press.
7. Rakshit, M., Studies in the Macroeconomics of Developing Countries, OUP, New Delhi.
8. Vasudevan, A., Central Banking for Emerging Market Economies, Academic Foundation, New Delhi.

**Suggested online link:**

[www.ignou](http://www.ignou)  
[www.swayam](http://www.swayam)  
[www.inflibnet](http://www.inflibnet)

*Page*      *Amir*      *मोहम्मद*  
*Prakash*      *Prakash*  


**Semester VIII**

**Bachelor of Economics with Research**

**DISCIPLINE SPECIFIC ELECTIVE (DSE)- Advanced Public Finance-II**

**No. of Hours-60**

**CREDIT DISTRIBUTION, ELIGIBILITY, PRE-REQUISITES OF THE COURSE**

Course Title	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisites of the course (if any)
		Theory	Tutorial	Practical/Practice		
DSE: Advanced Public Finance-II	4	3	1	0	Passed Bachelor of Economics	Nil

**Bachelor of Economics with Research**

Programme : Bachelor of Economics with Research

Year IV

Semester VIII  
Paper II (a)

Subject : Economics

Course Code: ECODSE801

Course Title : Advanced Public Finance-II

Course Outcomes: The course will help students to:

- Understand fiscal policy, fiscal federalism, budget preparation and deficit financing.
- Understand the Indian tax structure.

Credits : 4 Credits

Unit	Topics	Discipline Specific Elective	
			No. Of Lecture
I	Fiscal Policy: Meaning and Objectives in a Developing Economy. Full Employment and Fiscal policy. Fiscal Federalism: Basic principles. Fiscal Federalism in India: Constitutional division of Income, Constitutional Provision for Finance Commissions, Division of Resources and Grant. Transfer of resources from Union to states.		18
II	Indian Tax System: Revenue of Union, States and Local Bodies. Major Taxes in India: Tax Base, Direct and Indirect Taxes, Issue of Taxation of Agriculture, Expenditure Tax, Goods and Service Tax (GST). Tax Reforms in India. Non-Tax Revenue sources of the Central, States and Local Bodies.		15
III	Union Govt. Budget: Preparation, Presentation and Execution. Current Union Budget. Balanced Budget Multiplier. Items of expenditure: Union, State & Local Bodies. Causes of Increase in Public Expenditure & Public Debt.		12

*Handwritten signatures and notes:*  
*Prasanna*  
*Prasanna*  
*Prasanna*  
*Prasanna*

<b>IV</b> Deficit Financing and Types of Deficits: Revenue Deficit, Primary Deficit, Budgetary Deficit and Fiscal Deficit. Fiscal Sector reforms in India and Report of last Finance Commission.	15
--	----

**Essential Reading:**

1. Buchanan, I.M., Public Finance, Irwin, New York.
2. Musgrave, R.A. and Musgrave P.B., Public Finance in Theory and Practice, McGraw Hill, New York.
3. Shukla, H.L., Public Finance, Vikas Publishing House, New Delhi.
4. Herbert, S.P., Modern Public Finance, ATBS, New Delhi.

**Recommended / Additional Reading:**

1. Park, A.R. and Butt, N.A., Public Finance in Theory and Practice, ELBS, London.
2. Park, A.R., Public Finance in Under-developed Countries, Vikas, New Delhi.
3. Buchanan, I.M., Public Principles of Public Debt, Irwin, Homewood, Ill, USA.
4. Singh, S. K., Public Finance in Theory and Practice, S. Chand, New Delhi.
5. Reserve Bank of India, Monthly Bulletins.
6. Budget Papers of the Government of India.
7. Report Budget of India

**Suggested online link:**

- [www.jicaa](http://www.jicaa)
- [www.swaem](http://www.swaem)
- [www.infibnet](http://www.infibnet)

*Page* *amip* *Section 4*  
*Principles*  
*D*

**Semester VIII**

**Bachelor of Economics with Research**

**DISCIPLINE SPECIFIC ELECTIVE (DSE)- Research Methodology-II**  
**No. of Hours-60**

**CREDIT DISTRIBUTION, ELIGIBILITY, PRE-REQUISITES OF THE COURSE**

Course Title	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisites of the course (if any)
		Theory	Tutorial	Practical/Practice		
DSE: Research Methodology-II	4	3	1	0	Passed Bachelor of Economics	Nil

<b>Bachelor of Economics with Research</b>		
Programme: Bachelor of Economics with Research	Year IV	Semester VIII
Subject : Economics		Paper II (b)
Course Code: ECODSEM802	Course Title : Research Methodology-II	
<b>Course Outcomes:</b> <ul style="list-style-type: none"> <li>The students will be able to learn about correlation and regression.</li> <li>The students will learn about inferential statistics.</li> <li>The students will learn report writing and use of computers in social science research.</li> </ul>		
<b>Credits : 4 Credits</b>		
Unit	Topics	Discipline Specific Elective No. Of Lecture
I	Correlation: Meaning, Assumptions and Limitations of Simple Correlation. Various methods of determining Correlation (Graphical and Mathematical Methods). Probability theory, Probable Error.	18
II	Probability Distribution - PMF (Probability Mass Function)- Binomial and Poisson Distribution and PDF (Probability Density Function)- Normal distribution, t-Distribution, chi-square Distribution  Large sample & Small sample. Type-I & Type II Errors. Level of Significance. Interpretation of p-value. One-tail and Two-tail tests. Testing of Significance for Small and Large Samples (Z-test, t-test, Chi Square test, F-test and Analysis of Variance (ANOVA).	15

	Regression Analysis (for two & three variables).	
III	Report writing: Types of Reports, Mechanics, Significance & Steps in Report Writing. Format of the research report. Footnote and Endnote. Rules for Citations & References. Bibliography writing -APA & MLA methods. Use of tables and graphs in report. Writing an article for a National Seminar/publication in a Research Journal.	17
IV	Uses of Computers in Social Sciences Research and Econometric Packages.	10

**Essential Reading:**

1. Kothari, C.R.: Research Methodology.
2. R.N. Trivedi & D.P. Shukla : Research Methodology ( in Hindi).
3. Cauvery, R., et.al., Research Methodology, S. Chand, New Delhi.
4. Sharma, Manoj, Research Methodology, Anmol Publications, New Delhi, 2004.
5. पारस राय, अनुसंधान परिचय।

**Recommended /Additional Reading:**

1. Paul Wright, Qualitative Research and Evaluation, Jones & Bartlett Learning
2. Tandon: Research Methodology in Social Sciences.
3. Yojna. Monthly Magazine.
4. Economic Times, Financial Express and other Newspapers.
5. Economic Magazines.
6. Reports of various agencies.
7. एच0 के कपिल, अनुसंधान विधियां, एच0पी0 भार्गव बुक हाऊस आगरा

**Suggested online link :**

[www.ignou](http://www.ignou)  
[www.swayam](http://www.swayam)  
[www.inflibnet](http://www.inflibnet)

Payz

Amij

मोहनसिंह

Pranish

Arder

B

**Semester VIII**

**Bachelor of Economics with Research**

**DISCIPLINE SPECIFIC ELECTIVE (DSE)- Advanced Statistics**  
 No. of Hours-60

**CREDIT DISTRIBUTION, ELIGIBILITY, PRE-REQUISITES OF THE COURSE**

Course Title	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisites of the course (if any)
		Theory	Tutorial	Practical/Practice		
DSE: Advanced Statistics	4	3	1	0	Passed Bachelor of Economics	Nil

Bachelor of Economics with Research		
Programme : Bachelor of Economics with Research	Year IV	Semester VIII Paper II (c)
Subject : Economics		
Course Code: ECODSE803	Course Title : Advanced Statistics	
Course Outcomes: The course will help students to: <ul style="list-style-type: none"> <li>• Understand sampling and data collection techniques.</li> <li>• Learn the descriptive statistics and data analysis.</li> <li>• Learn about time series analysis and probability theory</li> <li>• Learn and apply inferential statistics and linear regression.</li> </ul>		
Credits : 4 Credits		Discipline Specific Elective
Unit	Topics	No. Of Lecture
I	<b>Introduction to Sampling and Data Collection</b> Planning and Execution of Sample Surveys. Collection, Classification, Tabulation, and Presentation of Data. Sampling Theory and Design of Sample Surveys: Theoretical Basis of Sampling, Methods and Types of Sampling, Errors in Sampling, Merits and Limitations of Sampling	12
II	<b>Descriptive Statistics and Data Analysis</b> Different Types of Averages. Dispersion: Range, Standard Deviation, Coefficient of Variation, Probable Error, Lorenz Curve and Gini Coefficient. Skewness and Kurtosis. Simple Correlation.	14
III	<b>Time Series Analysis, Interpolation-Extrapolation and Probability Tests</b>	17

*Handwritten signatures and notes:*  
 Prakash, Pappu, and other illegible signatures.

	Time Series Analysis and Components of Time Series, Methods of Measurement of Trend, Measurement of Seasonal, Cyclical, and Irregular Variations. Interpolation and Extrapolation.  Probability Theory, Probability Distribution Function -PMF (Probability Mass Function)- Binomial and Poisson Distribution and PDF (Probability Density Function)-Normal distribution, t-Distribution, chi-square Distribution.	
<b>IV</b>	Statistical Inference and Testing of Hypotheses. Large sample & Small sample. Type-I & Type II Errors. Level of Significance. Interpretation of p-value. One-tail and Two-tail tests. Testing of Significance for Small and Large Samples (Z-test, t-test, Chi Square test, F-test and Analysis of Variance (ANOVA). Regression Analysis (for two & three variables).	17

**Essential Reading:**

1. Gupta, S.P., Statistical Methods, (English) Sultan Chand, Delhi.
2. Gupta, S.P., Statistical Methods, (Hindi Edition), Sultan Chand, Delhi.
3. Singh, S.P., Statistics: Theory and Practice (Hindi Edition), S. Chand, Delhi.
4. Gupta, S.C., Fundamentals of Statistics, Himalaya Publishing House, Mumbai.

**Recommended /Additional Reading:**

1. Seymour Lipschutz & John Schiller: Introduction to probability and statistics, Schaum's Outlines McGraw Hill.
2. Alexander M. Mood, Franklin A. Graybill. And Duane C. Boes, Introduction to the theory of statistics, 3th Edition, McGraw-Hill.
3. Karmel, P.H. & M. Polasek, Applied Statistics for Economics, Pitman Publishing, London.
4. Cochran, Sampling Techniques, John Wiley, New York.
5. Croxton and Cowden, Applied General Statistics, Prentice Hall, London.
6. Yamane, Taro, Statistics- An Introductory Analysis, Harper & Row, New York.
7. Des Raj, The Design of Sample Surveys, McGraw Hill, New York.
8. Wonnacott, T.& R. Wonnacott, Introductory Statistics for Business and Economics, John Wiley, N.Y.
9. Deming, W. Edwards, Theory of Sampling, John Wiley, New York.
10. Srivastava, S.C. & Sangya Srivastava, Fundamentals of Statistics, Anmol Publications, New Delhi.
11. जीतेन्द्र कुमार लोहनी एवं पदम एस बिष्ट अर्थशास्त्र में गणितीय एवं सांख्यिकीय विधियाँ कुनाल बुक्स दिल्ली

**Suggested online link :**

[www.ignou](http://www.ignou)  
[www.swayam](http://www.swayam)  
[www.inflibnet](http://www.inflibnet)

*मोहनलाल राय*

*अरुण रायसिंह*  
*सुदेश*

**Semester X  
Master's in Economics**

**DISSERTATION ON MAJOR/MINOR**

**CREDIT DISTRIBUTION, ELIGIBILITY, PRE-REQUISITES OF THE COURSE**

Course Title	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisites of the course (if any)
		Theory	Tutorial	Field work/ Practical/Practice		
DISSERTATION ON MAJOR/MINOR	6	0	2	4	Passed Bachelor of Economics with Research	Nil

<b>Master's in Economics</b>			
Programme : Master's in Economics		Year V	Semester X
Subject : Economics		Paper IV	
Course Code: ECOAP1001	Course Title: Dissertation on Major/Minor		
Credits :6 Credits	Dissertation on Major/Minor (Compulsory)		
Note: Dissertation will be based on Primary/Secondary data.			

The student will have to undergo a Dissertation on Major/ Dissertation on Minor on any relevant socio-economic problem allotted by the concerned teacher and prepare a report of 60 to 100 pages, duly typed and binded (A4 size paper having in Hindi/English with 1.5-line gap).

*[Handwritten signature]*

*[Handwritten signature]*

*[Handwritten signature]*