



# University of Rajasthan Jaipur

## SYLLABUS

(Three/Four Year Under Graduate Programme)

**B.A. – Economics**

**I & II Semester**

**Examination-2023-24**

As per NEP - 2020

*Poj / Jas*  
Dy. Registrar (Acad.)  
University of Rajasthan  
JAIPUR

# UNIVERSITY OF RAJASTHAN

## DEPARTMENT OF ECONOMICS

**Programme Name: UG9102 - Four Year B.A. (Economics)**

The Programme is divided into four parts and each part will consist of two semesters.

Part	Year	Odd Semester	Even Semester
Part-I	First Year	Semester-I	Semester-II
Part-II	Second Year	Semester-III	Semester-IV
Part-III	Third Year	Semester-V	Semester-VI
Part-IV	Fourth Year	Semester-VII	Semester-VIII

S. No.	Discipline / Subject	Page No.
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**Name of University : University of Rajasthan, Jaipur**

**Name of Faculty : UG9102 – B.A. (Economics)**

**Name of Discipline : Major-Economics**

**Programme Prerequisites : Passed 12<sup>th</sup> Class**

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## **Programme Outcomes (POs):**

- Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
- Provides a firm basis for much of the advanced thinking in the Economics discipline. It provides the student with a logical paradigm for modelling and interpreting the behaviour and interactions of households, firms, and government institutions.
- Understand the basic economic issues and problems of real world.
- Learn the mathematical and statistical techniques necessary for a proper understanding of the discipline, get trained to collect primary data and gain an understanding of proper policy responses to economic problems.
- Learn to use scientific empirical methods to arrive at conclusions about the validity of economic theories.
- Providing students the flexibility to prepare for careers in academia, law, management, journalism, government, and many other fields.

## **Scheme of Examination for the Session 2023-2024**

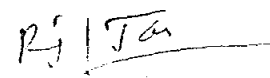
### **Scheme of the Examination for Practical subjects:**

#### **1 Credit = 25 marks for examination/evaluation**

Continuous assessment, in which sessional work and the terminal examination will contribute to the final grade. Each course in Semester Grade Point Average (SGPA) has two components- Continuous assessment (20% Weightage) and (End of Semester Examination) EoSE (80% Weightage).

1. Sessional work will consist of class tests, mid-semester examination(s), homework assignments, etc., as determined by the faculty in charge of the courses of study.

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2. Each Paper of EoSE shall carry 80% of the total marks of the course/subject. The EoSE will be of 3 hours duration.
  - Part-A of the paper shall have multiple questions of equal marks. This first question shall be based on knowledge, understanding and applications of the topics/texts covered in the syllabus.
  - Part-B of the paper shall consist of 4 questions with an internal choice of each. The four questions will be set with one from each of the units with internal choice. Third to fourth questions shall be based on applications of the topics/texts covered in the syllabus (60% Weightage) and shall involve solving Problems (40% Weightage) if applicable.
3. 75% Attendance is mandatory for appearing in EoSE.
4. To appear in the EoSE examination of a course/subject student must appear in the mid-semester examination and obtain at least a "C" grade in the course/subject.
5. Credit points in a Course/Subject will be assigned only if, the student obtains at least a C grade in midterm and EoSE examination of a Course/Subject.

### **Scheme of the Examination for Non-practical subjects:**

#### **1 Credit = 25 marks for examination/evaluation**

Continuous assessment, in which sessional work and the terminal examination will contribute to the final grade. Each course in Semester Grade Point Average (SGPA) has two components- Continuous assessment (20% weightage) and (End of Semester Examination) EoSE (80% weightage).

6. Sessional work will consist of class tests, mid-semester examination(s), homework assignments, etc., as determined by the faculty in charge of the courses of study.
7. Each Paper of EoSE shall carry 80% of the total marks of the course/subject. The EoSE will be of 3 hours duration.
  - Part-A of the paper shall have multiple questions of equal marks. This first question shall be based on knowledge, understanding and applications of the topics/texts covered in the syllabus.
  - Part B of the paper shall consist of 2 questions with an internal choice of each. The questions will be set with one from each of the units.

- Part C of the paper shall consist of 4 questions with an internal choice of each. The four questions will be set with one from each of the units with internal choice. Third to fourth questions shall be based on applications of the topics/texts covered in the syllabus (60 % Weightage) and shall involve solving Problems (40% Weightage) if applicable.
8. 75% Attendance is mandatory for appearing in EoSE.
  9. To appear in the EoSE examination of a course/subject student must appear in the mid-semester examination and obtain at least a C grade in the course/subject.
  10. Credit points in a Course/Subject will be assigned only if, the student obtains at least a C grade in midterm and EoSE examination of a Course/Subject

### Contact Hours

#### 15 Weeks per Semester

L – Lecture	(1 Credit = 1 Hour/Week)
T – Tutorial	(1 Credit = 1 Hour/Week)
S – Seminar	(1 Credit = 2 Hours/Week)
P – Practical/Practicum	(1 Credit = 2 Hours/Week)
F – Field Practice/Projects	(1 Credit = 2 Hours/Week)
SA – Studio Activities	(1 Credit = 2 Hours/Week)
I – Internship	(1 Credit = 2 Hours/Week)
C – Community Engagement and Service	(1 Credit = 2 Hours/Week)

### Exit and Entrance Policy

1. Students who opt to exit after completion of the first year and have secured 48 credits will be awarded a UG Certificate if, in addition, they complete one internship of 4 credits during the summer vacation of the first year. These students are allowed to re-enter the degree programme within three years and complete the degree programme within the stipulated maximum period of seven years.

2. Students who opt to exit after completion of the second year and have secured 96 credits will be awarded the UG diploma if, in addition, they complete one internship of 4 credits during the summer vacation of the second year. These students are allowed to re-enter within a period of three years and complete the degree programme within the maximum period of seven years.
3. Students who wish to undergo a 3-year UG programme will be awarded UG Degree in the Major discipline after successful completion of three years, securing 150 credits and satisfying the minimum credit requirement.
4. A four-year UG Honours degree in the major discipline will be awarded to those who complete a four-year degree programme with 200 credits and have satisfied the minimum credit requirements.
5. Students who secure 75% marks and above in the first six semesters and wish to undertake research at the undergraduate level can choose a research stream in the fourth year. They should do a research project or dissertation under the guidance of a faculty member of the University/College. The research project/dissertation will be in the major discipline. The students, who secure 200 credits, including 12 credits from a research project/dissertation, are awarded UG Degree (Honours with Research).

### Letter Grades and Grade Points

Letter Grade	Grade Point	Marks Range (%)
O (outstanding)	10	91 - 100
A+ (Excellent)	9	81 - 90
A (Very good)	8	71 - 80
B+ (Good)	7	61 - 70
B (Above average)	6	51 - 60
C (Average)	5	40 - 50
P (Pass)	4	
F (Fail)	0	
Ab (Absent)	0	

When students take audit courses, they may be given a pass (P) or fail (F) grade without any credits.

## SEMESTER-WISE PAPER TITLES WITH DETAILS

UG9102 – B. A. (Economics)								
Subject/Discipline: Economics								
#	Level	Semester	Type	Title	Credits			
					L	T	P	Total
1.	5	I	MJR	UG9102 – ECO-51T-101: Introductory Microeconomics	6	0	0	6
2.	5	I	MJR	UG9102 –ECO-51T-102: Mathematical Methods for Economics-I	4	0	0	4
3.	5	I	MJR	UG9102 –ECO-51P-103: Eco-Practical-I	0	0	2	2
4.	5	II	MJR	UG9102 –ECO-52T-104: Introductory Macroeconomics	6	0	0	6
5.	5	II	MJR	UG9102 –ECO-52T-105: Mathematical Methods for Economics-II	4	0	0	4
6.	5	II	MJR	UG9102 –ECO-52P-106: Eco-Practical-II	0	0	2	2
7.	6	III	MJR	UG9102 –ECO-63T-201: Intermediate Microeconomics	6	0	0	6
8.	6	III	MJR	UG9102 –ECO-63T-202: Mathematical Economics	4	0	0	4
9.	6	III	MJR	UG9102 –ECO-63P-203: Eco-Practical-III	0	0	2	2
10.	6	IV	MJR	UG9102 –ECO-64T-204: Intermediate Macroeconomics	6	0	0	6
11.	6	IV	MJR	UG9102 –ECO-64T-205: Statistics-I	4	0	0	4
12.	6	IV	MJR	UG9102 –ECO-64P-206: Eco-Practical-IV	0	0	2	2
13.	7	V	MJR	UG9102 –ECO-75T-301: Indian Economy-I	6	0	0	6
4.	7	V	MJR	UG9102 –ECO-75T-302: Statistics-II	4	0	0	4
5.	7	V	MJR	UG9102 –ECO-75P-303: Eco-Practical-V	0	0	2	2
6.	7	VI	MJR	UG9102 –ECO-76T-304: Indian Economy-II	6	0	0	6
7.	7	VI	MJR	UG9102 –ECO-76T-305: Econometrics	4	0	0	4

18.	7	VI	MJR	UG9102 –ECO-76P-306: Eco-Practical-VI	0	0	2	2
19.	8	VII	MJR	UG9102 –ECO-87T-401: Public Economics-I	6	0	0	6
20.	8	VII	MJR	UG9102 –ECO-87T-402: International Economics-I	6	0	0	6
21.	8	VII	MJR	UG9102 –ECO-87T-403: Development Economics-I	4	0	0	4
22.	8	VII	MJR	UG9102 –ECO-87P-404: Eco-Practical-VII	0	0	2	2
23.	8	VIII	MJR	UG9102 –ECO-88T-405: Public Economics-II	4	0	0	4
24.	8	VIII	MJR	UG9102 –ECO-88T-406: International Economics-II	6	0	0	6
25.	8	VIII	MJR	UG9102 –ECO-88T-407: Development Economics-II	6	0	0	6
26.	8	VIII	MJR	UG9102 –ECO-88P-408: Eco-Practical-VIII	0	0	2	2

## Syllabus

### UG9102 –B.A. (Economics)

#### Semester -I: Economics

Session: 2023-2024

Type	Paper Code and Nomenclature	Duration of Examination	Maximum Marks (Midterm + EoSE)	Minimum Marks (Midterm + EoSE)
Theory	UG9102 – ECO-51T-101: Introductory Microeconomics	1Hrs -MT	30 Marks-MT	12 Marks-MT
		3 Hrs- EoSE	120 Marks-EoSE	48 Marks-EoSE
Theory	UG9102 –ECO-51T-102: Mathematical Methods for Economics-I	1Hrs -MT	20 Marks-MT	08 Marks-MT
		3 Hrs- EoSE	80 Marks-EoSE	32 Marks-EoSE



Practical	UG9102 –ECO-51P-103: Eco-Practical-I	1 Hrs -MT	10 Marks-MT	04Marks-MT
		3Hrs- EoSE	40 Marks-EoSE	16 Marks-EoSE
<b><u>EoSE Marks Distribution:</u></b>				
1. Practical Record : 08 Marks				
2. Written Test : 24 Marks				
3. Viva-Voce : 08 Marks				

Semester	I
Code of the Course	UG9102 – ECO-51T-101
Title of the Course/Paper	Introductory Microeconomics
NHEQF Level	5
Credits	6
Level of Course	Introductory
Type of the Course	Major
Delivery Type of the Course	Lectures
Prerequisites	NIL
Eligibility Criteria	Passed 12th Class
Objectives of the Course	This course is framed in such a way that students can equip themselves with the basic principles of microeconomic theory in order to deal with real-world micro economic problems.
Course Outcome	The students learn some basic principles of microeconomics and interactions of supply, demand, household, production, cost and characteristics of markets.

## Detailed Syllabus

### UG9102 – ECO-51T-101: INTRODUCTORY MICROECONOMICS

#### Unit -I

**Subject Matter of Economics:** Why study economics? Scope and method of economics; the economic problem: scarcity and choice, opportunity cost; three problems of economic system: the question of what to produce, how to produce and how to distribute output; science of economics; positive versus normative analysis.

**Demand:** Law of demand; determinants of demand; shifts of demand versus movements along a demand curve; market demand.

**Supply:** Law of supply; determinants of supply; shifts of supply versus movements along a supply curve; market supply; market equilibrium; elasticity and its application; consumer surplus; producer surplus.

(25 Lecture)

#### Unit-II

**The Households:** The consumption decision - budget constraint, concept of utility, diminishing marginal utility, Diamond-water paradox, consumption and income/price changes, demand for all other goods and price changes; consumer choice: indifference curves, properties of indifference curves derivation of demand curve from indifference curve and budget constraint; consumer equilibrium, income and substitution effects; labour supply and savings decision - choice between leisure and consumption.

(20 Lecture)

#### Unit-III

**Production:** Behaviour of profit maximising firms, production process, production functions, law of variable proportions, choice of technology, isoquant and iso cost lines.

**Costs:** Costs in the short run, costs in the long run, revenue and profit maximization, minimizing losses, short run industry supply curve, economies and diseconomies of scale, producer equilibrium.

**Perfect Competition:** Assumptions, features, supply curve of a competitive firm, short run and long run equilibrium of a firm/ industry.

(25 Lecture)

#### Unit-IV

**Monopoly:** meaning, source, types, assumptions, features, price and output determination in the short run and long run.

**Monopolistic Competition:** Monopolistic Competition: features / characteristics of monopolistic competitions, short run and long run equilibrium of a firm, role of advertising;

**Oligopoly:** assumptions, features, types, brief description of important oligopoly models.

(20 Lecture)

#### Suggested Books:

1. Ahuja H.L (2017). Advanced Economic Theory, S. Chand and Company, New Delhi.
2. Bernheim, B., Whinston, M. (2009). Microeconomics. Tata McGraw-Hill.
3. Dominick Salvatore (2002) Theory and Problems of Microeconomic Theory, Schaum's Outline Series, McGraw-Hill Book Company, Singapore.
4. H. R (2010). Intermediate Microeconomics: A Modern Approach, W. W. Norton and Company, 8th Edition,
5. Koutsoyiannis A, (2008). Modern Microeconomics, Macmillan, London.
6. Mankiw, N. (2007). Economics: Principles and applications, 4th ed. Cengage Learning, 2007.
7. Pindyck Robert S., and Daniel L. Rubinfeld, (2012) Microeconomics, Pearson Prentice Hall, New Jersey.

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Semester	I
Code of the Course	UG9102 – ECO-51T-102
Title of the Course/Paper	Mathematical Methods for Economics-I
NHEQF Level	5
Credits	4
Level of Course	Introductory
Type of the Course	Major
Delivery Type of the Course	Lectures
Prerequisites	NIL
Eligibility Criteria	Passed 12th Class
Objectives of the Course	This is the first of two-course sequence. The objective of course is to transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level.
Course Outcome	The course refines and upgrades the mathematical skills and paves the way for the second semester course Mathematical Methods for Economics-II.

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## Detailed Syllabus

UG9102 – ECO-51T-102: MATHEMATICAL METHODS FOR ECONOMICS-I

### Unit -1

**Preliminaries:** Variables, constants and parameters; equation and identity; The Real Number System; Sums; Products; Induction; A digression on exponents; The Concept of Sets-set notation, relationship between sets, operation on sets, laws of set operations; Relations and Functions; Functions and their graphical representations - constant functions, polynomial function and its subclasses, rational functions, Algebraic v/s non-algebraic functions, exponential functions, logarithms and logarithmic functions, slope of linear and non-linear functions; Functions of two or more independent variables.

(15 Lecture)

### Unit-II

**The differential calculus:** Limits and Continuity, Concept of the derivative; Rules of differentiation for a function of one variable; Rules of differentiation involving two or more functions of the same variable; Rules of differentiation involving functions of different variables; Derivatives of Exponential function and logarithmic functions; Rules for differentiation- first and second order partial derivatives of two independent variable functions; Total differentials and total derivatives of functions having more than one independent variable; Implicit function and its derivative.

(15 Lecture)

### Unit-III

**Integral Calculus:** Concept of the Integration; Indefinite and Definite Integrals (excluding Trigonometric functions), Economic applications: consumer surplus and producer surplus.

(12 Lecture)

### Unit-IV


**Matrix Algebra and Determinants:** Matrices and Vectors; Matrix Operations; Basic principles of Matrix Addition and Multiplication, Type of Matrices and their properties;

Conditions for Non-singularity of a Matrix; Rank of a Matrix. Determinants and non-singularity, evaluating second –order determinant, evaluating third–order determinant, relationship between Minors and Cofactors; Basic properties of determinants; The transpose of a matrix, the cofactor matrix, Ad joint of a Matrix, Finding the inverse matrix, solution of linear simultaneous equations by matrix inversion method and Cramer’s rule.

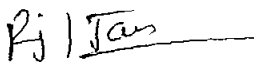
(18 Lecture)

**Suggested Books:**

1. Alpha C. Chiang and Kevin Wainwright, Fundamental Methods of Mathematical Economics, Fourth Edition, Mc Graw Hill International Edition, 2005.
2. Knut Sydsaeter and Peter J. Hammond, Mathematics for Economic Analysis, Low Price Edition, Pearson Education, New Delhi, 2007.
3. Mehta B.C. and G.M.K Madnani (2008). Mathematics for Economics, Sultan Chand & Sons, New Delhi.

  
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Semester	I
Code of the Course	UG9102 – ECO-51P-103
Title of the Course/Paper	Eco-Practical-I
NHEQF Level	5
Credits	2
Level of Course	Introductory
Type of the Course	Major
Delivery Type of the Course	Practicum
Prerequisites	NIL
Eligibility Criteria	Passed 12th Class
Objectives of the Course	The main objective of this course is to discuss important case studies of microeconomics and also use mathematical tools and techniques for solving problems in the field of microeconomics.
Course Outcome	The course develops skills for solving problems in the field of microeconomic analysis.

  
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## Detailed Syllabus

UG9102 –ECO-51P-103: Eco-Practical-I

1. **Case Studies:** Theory of Consumer Behaviour, Theory of Firm and Market Structure.


(20 Hour)

2. **Graphical Representations:** Demand Schedule; Supply Schedule; Budget Constraint; Production function; Cost Function; Demand and Supply curves under different market structures.

(20 Hour)

3. **Measurements:** Total function; Average function; Marginal functions; Slope; Elasticity; Consumer surplus; Producer surplus.

(20 Hour)

  
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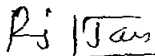
## Syllabus

### UG9102 –B.A. (Economics)

#### Semester -II: Economics

Session: 2023-2024

Type	Paper Code and Nomenclature	Duration of Examination	Maximum Marks (Midterm + EoSE)	Minimum Marks (Midterm + EoSE)
Theory	UG9102 – ECO-52T-104: Introductory Macroeconomics	1Hrs -MT	30 Marks-MT	12 Marks-MT
		3 Hrs- EoSE	120 Marks-EoSE	48 Marks-EoSE
Theory	UG9102 –ECO-52T-105: Mathematical Methods for Economics-II	1 Hrs -MT	20 Marks-MT	08 Marks-MT
		3 Hrs- EoSE	80 Marks-EoSE	32 Marks-EoSE
Practical	UG9102 –ECO-52P-106: Eco-Practical-II	1 Hrs -MT	10 Marks-MT	04Marks-MT
		3Hrs- EoSE	40 Marks-EoSE	16 Marks-EoSE
		<b><u>EoSE Marks Distribution:</u></b> 1. Practical Record : 08 Marks 2. Written Test : 24 Marks 3. Viva-Voce : 08 Marks		

  
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Semester	II
Code of the Course	UG9102 – ECO-52T-104
Title of the Course/Paper	Introductory Macroeconomics
NHEQF Level	5
Credits	6
Level of Course	Introductory
Type of the Course	Major
Delivery Type of the Course	Lectures
Prerequisites	NIL
Eligibility Criteria	Passed 12th Class
Objectives of the Course	The aim of this course is to provide the basic knowledge of Macroeconomics for understanding aggregate economic problems.
Course Outcome	This develops basic conceptual knowledge in students which will enable them to critically analyse various macroeconomic policies.

## Detailed Syllabus

### UG9102 – ECO-52T-104: INTRODUCTORY MACROECONOMICS

#### Unit-1

**Preliminaries:** Meaning and definition; Branches of Macroeconomics; microeconomics versus macroeconomics; Uses and limitations of Macroeconomics; statics, comparative statics and dynamics; Major Schools of thought in Macroeconomics; Economic Activities; Factors of Production and their rewards; Macroeconomic Variables.

**National Income Accounting:** Circular flow of National Income in Two and Three Sector Economy; National Income: Concepts, Components and Measurement, Inter-relationship between Three Measures of National Income.

(20 Lecture)

### Unit-II

**Money and Money Supply:** Money- Concept and Functions; Supply of Money: Measurement, Components, and Determinants, High-Powered Money and Money Multiplier; Credit Creation; Tools of Monetary Policy.

**Quantity Theory of Money and Demand for Money:** Brief description of Classical Quantity theory of Money; Keynesian Demand for Money Theory; Post Keynesian Views of Demand for Money: Baumol-Tobin Model of Transaction Demand for Money, James Tobin's Portfolio Balance Approach and Friedman's Demand for Money Approach.

(25 Lecture)

### Unit-III

**Consumption Function:** Determinants; Consumption Hypotheses: Absolute, Relative, Permanent and Lifecycle Hypotheses.

**Investment Function:** Determinants- NPV, MEC, MEC V/s MEI; Tobin's Q-Ratio; Accelerator Theory of Investment.

(25 Lecture)

### Unit-4

**Inflation:** Meaning and Concept, Causes and Types, effects and its social costs; hyperinflation; remedial measures to control inflation, employment-inflation trade off-concept of Philips's curve.

**Trade Cycles:** Meaning and phases of trade cycles, Hawtrey's Monetary Theory, Schumpeter's theory of innovation.

(20 Lecture)

*Handwritten notes:*  
UNIT 2  
UNIT 3  
UNIT 4

**Books Recommended:**

1. Andrew B. Abel and Ben S. Bernanke. Macroeconomics, Pearson Education Inc.
2. Dornbusch. R, S. Fisher and Richard Startz. Macro Economics, McGraw Hill.
3. Errol D'Souza. Macroeconomics, Pearson Education.
4. H.L. Ahuja. Macroeconomics: Theory and Policy, S. Chand, New Delhi.
5. N. Gregory Mankiw. Macroeconomics, Harvard University worth Publishers.
6. Olivier Blanchard. Macroeconomics, Pearson Education Inc.
7. Richard T. Froyen. Macroeconomics: Theories and Policies, Pearson Education Asia.
8. S.B. Gupta. Monetary Economics: Institutions, Theory & Policy, S. Chand, New Delhi.

<b>Semester</b>	<b>II</b>
<b>Code of the Course</b>	<b>UG9102 – ECO-52T-105</b>
<b>Title of the Course/Paper</b>	<b>Mathematical Methods for Economics-II</b>
<b>NHEQF Level</b>	<b>5</b>
<b>Credits</b>	<b>4</b>
<b>Level of Course</b>	<b>Introductory</b>
<b>Type of the Course</b>	<b>Major</b>
<b>Delivery Type of the Course</b>	<b>Lectures</b>
<b>Prerequisites</b>	<b>NIL</b>
<b>Eligibility Criteria</b>	<b>Passed 12th Class</b>

Objectives of the Course	This course is the second part of two-course sequence. The objective of this course is also to transmit the body of basic knowledge of mathematical methods for analysing economic theory.
Course Outcome	The course provides the mathematical foundations necessary for further study of a variety of disciplines including postgraduate economics, statistics, computer science, finance and data analytics. The analytical tools introduced in this course have applications wherever optimization techniques are used in business decision-making for managers and entrepreneurs alike. These tools are necessary for anyone seeking employment as an analyst in the corporate world

## Detailed Syllabus

### UG9102 – ECO-52T-105: MATHEMATICAL METHODS FOR ECONOMICS-II

#### Unit-I

**Unconstrained Optimization-The Case of One Choice Variable:** Optimum Values and Extreme Values; First and Second order conditions for a maxima, Minima and a point of inflexion; relevant applications.

**Unconstrained Optimization-The Case of Two Choice Variables:** First order and second order conditions for a maxima, Minima and saddle point solutions; conditions for concavity and convexity of a function; relevant applications.

(18 Lecture)

#### Unit-II

**Constrained Optimization by Lagrange (Multiplier Method) -The Case of Two Choice Variables:** First order and second order conditions for constrained maxima and minima;

Determinantal test for second order conditions, conditions for quasi-concavity and quasi-convexity of a function.

(12 Lecture)

### Unit-III

**Difference equations:** Solution of First and Second order homogeneous and non-homogeneous difference equations; Applications on Growth Model, A Cobweb Model, the lagged Keynesian macroeconomic model.

(15 Lecture)

### Unit-IV

#### Differential equations

Solution of first-order linear differential equations with constant coefficient and constant term; solution of first-order linear differential equations with variable coefficient and variable term.

(15Lecture)

#### Books Recommended:

1. Alpha C. Chiang and Kevin Wainwright, Fundamental Methods of Mathematical Economics, Fourth Edition, Mc Graw Hill International Edition, 2005.
2. Geoff, Renshaw, Mathematics for Economics, Oxford University Press, 2011.
3. Jaques, I, Mathematics for Economics and Business, Prentice Hall, 2010.
4. Knut Sydsaeter and Peter J. Hammond, Mathematics for Economic Analysis, Low Price Edition, Pearson Education, New Delhi, 2007.
5. Mehta B.C. and G.M.K Madnani, Mathematics for Economics, Sultan Chand & Sons, New Delhi, 2008.
6. Teresa Bradley and Paul Patton, Essential Mathematics for Economics and Business, Wiley, 2000.

Semester	II
Code of the Course	UG9102 –ECO-52P-106
Title of the Course/Paper	Eco-Practical-II
NHEQF Level	5
Credits	2
Level of Course	Introductory
Type of the Course	Major
Delivery Type of the Course	Practicum
Prerequisites	NIL
Eligibility Criteria	Passed 12th Class
Objectives of the Course	The objective of this course is also to transmit the body of basic knowledge of mathematical methods for analysing economic theory in general.
Course Outcome	To develop the practical understanding of the mathematical economics and how it can be applied in economics through excel and other related software.

## Detailed Syllabus

### UG9102 – ECO-52P-106: Eco-Practical-II

1. **Case studies:** Recession of 1970s, GDP Growth Stories, Supply of Money, National Income Accounting, employment-inflation trade-off, Trade Cycle, Global Financial Crisis.  

(20 Hour)
2. **Graphical Representation of functions with help of Excel:** Optimum and Extreme Values; Point of Inflexion; Concave and Convex Function, Quasi-Concave and Quasi-Convex Function.  

(20 Hour).
3. **Exercises:** Optimization techniques, Difference and Differential equations.  

(20 Hour)