Category II

B.A. Programmes with Economics as Major discipline

> **DISCIPLINE SPECIFIC CORE COURSE -5 (DSC-5): Intermediate Microeconomics I: Behavioural foundations of Market Interactions**

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
Intermediate Microeconomics I: Behavioural foundations of Market Interactions – ECON007	4	3	1	0	Passed Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:
- The course is designed to formally analyze the behaviour of individual agents like consumers and producers under certain conditions.
- Mathematical tools are used to facilitate understanding of the basic concepts.
- This course looks at the behaviour of the consumer and the choices of a competitive firm.

Learning outcomes

The Learning outcomes of this course are as follows:
- Students will learn the basic elements of consumption and production theories using various technical frameworks.
- This course provides them the behavioural foundations   of market supply and demand.

Syllabus

UNIT I: Consumer behaviour (15 hours)
Preference and utility, Budget and choice, Income and substitution effect, Demand derivation, Labour supply, One-person welfare

UNIT II: Decision-making under uncertainty (15 hours)
Expected utility, Risk aversion, Insurance, Risk spreading

UNIT III: Producer behaviour and markets (15 hours)
Technology, Profit maximization, Cost minimization, Supply, Short and long run

Recommended readings
- Serrano, Roberto and Feldman, Alan (2012), *A short course in intermediate Microeconomics with Calculus*, Cambridge University Press
- Espinola-Arredondo, Ana and Muñoz-Garcia, Felix (2020), *Intermediate Microeconomic Theory*, MIT Press
- Osborne, M J and Rubinstein, A (2020), *Models in Microeconomic Theory*, Open Book Publishers
- Muñoz-Garcia, Felix (2017) Practice *Practice Exercises for Advanced Microeconomic Theory*, MIT Press
- Dunaway, Eric; Strandholm, John C., Espinola-Arredondo, Ana and Munoz-Garcia, Felix (2020) *Practice Exercises for Intermediate Microeconomic Theory*, MIT press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
Optimization Methods for Economic Analysis – ECON023	4	3	1	0	Passed Class 12th	NIL

Learning Objectives

The Learning Objectives of this course are as follows:
- This course covers mathematical techniques used for comparative-static analysis and optimisation problems under various circumstances.
- The objective of this course is to transmit the body of basic mathematics that enables the study of economic theory.
- This course, in particular, includes rules of differentiation and its application in comparative-statistic analysis, unconstrained and constrained optimisation problems.

Learning outcomes

The Learning outcomes of this course are as follows:
- The students will be able to solve optimal solution and policy impacts using comparative- static analysis and statistic optimisation techniques.
- This offers the mathematical foundations necessary for further study of a variety of disciplines including postgraduate economics, statistics, computer science, finance and data analytic.
- The analytical tools introduced in this course will help them to apply optimization techniques used in business decision-making for managers, entrepreneurs and policy makers alike.

Syllabus

UNIT I: Comparative-Static Analysis (15 hours)
Derivatives, Slopes, Limit Theorem

UNIT II: Differentials and its role in Comparative static analysis (15 hours)

UNIT III: Optimisation Problems (15 hours)
Unconstrained and constrained optimisation with single and multiple variables, Lagrangian functions, quasi-concavity and convexity, envelope theorem

Recommended readings
- Chiang, A and Wainwright, K. (2005). Fundamental methods of mathematical economics. Boston, Mass. McGraw-Hill/Irwin.
- Sydsaeter, K., Hammond, P. (2002). *Mathematics for economic analysis*, Pearson Educational.
- Hoy, M., Livernois, J., McKenna, C., Rees, R., Stengos, T. (2001). *Mathematics for Economics*, Prentice-Hall India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.