

UNIVERSITY OF DELHI

DEPARTMENT Economics

COURSE NAME: B.A. Economics (Honours)

(SEMESTER - 1)

based on

Undergraduate Curriculum Framework 2022 (UGCF)

(Effective from Academic Year 2022-23)



University of Delhi

Course name: B.A. Economics (Honours)

Course Title	Nature of the Course	Total Credits	Components			Eligibility Criteria/ Prerequisite	Contents of the course and reference is in
			Lecture	Tutorial	Practical		
Introductory Microeconomics	DSC -1	4	3	1	0	NIL	Annexure-1
Introductory Mathematical Methods for Economics	DSC -2	4	3	1	0	NIL	Annexure-2
Introductory Statistics for Economics	DSC -3	4	3	1	0	NIL	Annexure-3

Introductory Microeconomics

- **Course Code :** ECON001
- **Course Abbreviation :** MICRO1
- **Credits:** 4
- **Duration (per week):** 4 hours (3 lectures+1 tutorial)

- **Course Objectives:**

This course is designed to expose students to the basic principles of microeconomic theory. The emphasis will be on teaching the fundamental economic trade-offs and allocation problems due to scarcity of resources. This course will use graphical methods to illustrate how microeconomic concepts can be applied to analyze real-life situations.

- **Course Learning Outcomes:**

Students will learn to think about economic trade-offs and opportunities. They will learn the fundamentals of market mechanisms and government interventions.

- **Content (Unit-wise):**

Unit 1 : Introduction to economic trade-offs

Resources and opportunities, Gains from trade, Individual and society Unit 2 :

How market works

Supply and demand, Price and resource allocation, Elasticity, Market, trade and welfare.

Unit 3 : Role of government

Taxation, Public good, Inequality and poverty Unit 4

: Individual decision and interactions

Decision versus strategic interaction, How to think about strategic interactions,
Real life Final Examinationples.

- **Suggested Readings**

- Mankiw, N. G. (2018). *Principles of Microeconomics* 8th ed.
- Frank, R. H., & Cartwright, E. (2010). *Microeconomics and behavior*. New York: McGraw-Hill.
- Dixit, A. K., & Skeath, S. (2015). *Games of strategy*: Fourth international student edition. WW Norton & Company.
- Acemoglu, D., Laibson, D., & List, J. (2017). *Microeconomics*. Pearson.

- **Course Assessment:** Internal Assessment - 25, Final Examination - 75

Introductory Mathematical Methods for Economics

- **Course Code :** ECON002
- **Course Abbreviation :** MME1
- **Credits:** 4
- **Duration** (per week): 4 hours (3 Lectures + 1 tutorial)
- **Course Objectives:**

This is the first of a compulsory three-course sequence. 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. 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. The sophistication would be maintained at a standard level to grow in the profession.

- **Course Learning Outcomes:**

The course hones and upgrades the mathematical skills acquired in school and paves the way for the second semester course Intermediate Mathematical Methods. The analytical tools introduced in this course have applications wherever unconstrained optimisation techniques are used in economics and business decision-making. These tools are necessary for anyone seeking employment as an analyst in the corporate world. The course additionally makes the student more logical in making or refuting arguments.

- **Content (Unit-wise):**

Unit 1 Preliminaries:

Logic and proof techniques; sets and set operations; relations; functions and their properties; number systems.

Unit 2 Functions of one real variable:

Graphs; elementary types of functions: quadratic, polynomial, power, exponential, logarithmic; sequences and series: convergence, algebraic properties and applications; continuous functions: characterisation, properties with respect to various operations and applications; differentiable functions: characterisation, properties with respect to various operations and applications; second and higher order derivatives: properties and applications.

Unit 3 Single-variable optimization

Geometric properties of functions: convex functions, their characterisation and applications; local and global optima: geometric and calculus-based characterisation, applications.

- **Suggested Readings:**

- Sydsaeter, K., Hammond, P. (2002). *Mathematics for economic analysis*. Pearson Education.
- Hoy, M., Livernois, J., McKenna, C., Rees, R., Stengos, T. (2001). *Mathematics for Economics*, Prentice-Hall India.

- **Course Assessment:** Internal Assessment - 25, Final Examination - 75

Introductory Statistics for Economics

- **Course Code :** ECON003
- **Course Abbreviation :** STAT1
- **Credits:** 4
- **Duration (per week):** 4 hours (3 Lectures + 1 Tutorial)
- **Course Objectives:**

The course familiarizes students with methods of summarizing and describing important features of data. The course teaches students the basics of probability theory and sets a necessary foundation for Inferential Statistical Theory and the Econometrics courses. The familiarity with probability theory will also be valuable for courses in economic theory.

- **Course Learning Outcomes:**

The student would understand the concept of probability, random variables and their distributions and become familiar with some commonly used discrete and continuous distributions of random variables so that they would be able to analyse various real-life data.

- **Content (Unit-wise):**

Unit 1 : Introduction and overview

The distinction between populations and samples and, between population parameters and sample statistics; Pictorial Methods in Descriptive Statistics; Measures of Location and Variability.

Unit 2 : Elementary probability theory

Sample spaces and events; probability axioms and properties; counting techniques; conditional probability and Bayes' rule; independence.

Unit 3 : Random variables and probability distributions

Defining random variables; discrete and continuous random variables, probability distributions; expected values and functions of random variables.

Unit 4 : Sample Distributions

Properties of commonly used discrete and continuous distributions (uniform, binomial, exponential, Poisson, hypergeometric and Normal random variables).

Unit 5 : Random sampling and jointly distributed random variables

Density and distribution functions for jointly distributed random variables; computing expected values of jointly distributed random variables; conditional distributions and expectations, covariance and correlation.

- **Suggested Readings:**

- Devore, J. (2012). *Probability and Statistics for Engineers*, 8th ed. Cengage Learning.
 - John A. Rice (2007). *Mathematical Statistics and Data Analysis*, 3rd ed. Thomson Brooks/Cole.
 - Miller, I., Miller, M. (2017). *J. Freund's Mathematical Statistics with Applications*, 8th ed. Pearson.
 - Hogg, R., Tanis, E., Zimmerman, D. (2021) *Probability and Statistical inference*, 10th Edition, Pearson
- **Course Assessment:** Internal assessment - 25, final Examination – 75