

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WB
Syllabus of B. Sc. In Economics
(Effective for 2021-2022 Admission Session)
Choice Based Credit System
140 Credit (3-Year UG) MAKAUT Framework
w.e.f 2021-22

Semester-III

Core Economics Course 5: INTERMEDIATE MICROECONOMICS - I

Course Description

The course is designed to provide a sound training in microeconomic theory to formally analyze the behaviour of individual agents. 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 behaviour of the consumer and the producer and also covers the behaviour of a competitive firm.

Course Outline

1. Consumer Theory

Preference; utility; budget constraint; choice; demand; Slutsky equation; buying and selling; choice under risk and intertemporal choice; revealed preference.

2. Production, Costs and Perfect Competition

Technology; isoquants; production with one and more variable inputs; returns to scale; short run and long run costs; cost curves in the short run and long run; review of perfect competition.

Readings:

1. Hal R. Varian, *Intermediate Microeconomics, a Modern Approach*, W.W. Norton and Company/Affiliated East-West Press (India), 8th edition, 2010. The workbook by Varian and Bergstrom may be used for problems.
2. C. Snyder and W. Nicholson, *Fundamentals of Microeconomics*, Cengage Learning (India), 2010.
3. B. Douglas Bernheim and Michael D. Whinston, *Microeconomics*, Tata McGraw-Hill (India), 2009.

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Core Economics Course 6: INTERMEDIATE MACROECONOMICS - I

Course Description

This course introduces the students to formal modeling of a macro-economy in terms of analytical tools. It discusses various alternative theories of output and employment determination in a closed economy in the short run as well as medium run, and the role of policy in this context. It also introduces the students to various theoretical issues related to an open economy.

Course Outline

1. Aggregate Demand and Aggregate Supply Curves

Derivation of aggregate demand and aggregate and supply curves; interaction of aggregate demand and supply.

2. Inflation, Unemployment and Expectations

Phillips curve; adaptive and rational expectations; policy ineffectiveness debate.

3. Open Economy Models

Short-run open economy models; Mundell-Fleming model; exchange rate determination; purchasing power parity; asset market approach; Dornbusch's overshooting model; monetary approach to balance of payments; international financial markets.

Readings:

1. Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010.
2. N. Gregory Mankiw. *Macroeconomics*, Worth Publishers, 7th edition, 2010.
3. Olivier Blanchard, *Macroeconomics*, Pearson Education, Inc., 5th edition, 2009.
4. Steven M. Sheffrin, *Rational Expectations*, Cambridge University Press, 2nd edition, 1996.
5. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education, Inc., 7th edition, 2011.
6. Errol D'Souza, *Macroeconomics*, Pearson Education, 2009
7. Paul R. Krugman, Maurice Obstfeld and Marc Melitz, *International Economics*, Pearson Education Asia, 9th edition, 2012.

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Core Economics Course 7: STATISTICAL METHODS FOR ECONOMICS

Course Description

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. It then develops 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. 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.

Course Outline

1. Introduction and Overview

The distinction between populations and samples and between population parameters and sample statistics; the use of measures of location and variation to describe and summarize data; population moments and their sample counterparts.

2. Elementary Probability Theory

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

3. Random Variables and Probability Distributions

Defining random variables; probability distributions; expected values of random variables and of functions of random variables; properties of commonly used discrete and continuous distributions (uniform, binomial, normal, poisson and exponential random variables).

4. Random Sampling and Jointly Distributed Random Variables

Density and distribution functions for jointly distributed random variables; computing expected values; covariance and correlation coefficients.

5. Sampling

Principal steps in a sample survey; methods of sampling; the role of sampling theory; properties of random samples.

6. Point and Interval Estimation

Estimation of population parameters using methods of moments and maximum likelihood procedures; properties of estimators; confidence intervals for population parameters.

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Readings:

1. Jay L. Devore, *Probability and Statistics for Engineers*, Cengage Learning, 2010.
2. John E. Freund, *Mathematical Statistics*, Prentice Hall, 1992.
3. Richard J. Larsen and Morris L. Marx, *An Introduction to Mathematical Statistics and its Applications*, Prentice Hall, 2011.
4. William G. Cochran, *Sampling Techniques*, John Wiley, 2007.

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w.e.f 2020-21

SEC 1- Statistics Lab 1

Credits- 2P

Course Objective: The course is designed to provide students with an understanding of the data and its relevance in business and develop an understanding of the quantitative techniques in statistics. Also to develop the ability to interpret the numerical information that forms the basis of decision-making in business.

Sl	Course Outcome	Mapped modules
1	Understand and explain Diagram	M1
2	Explain and apply frequency distribution	M1, M2
3	Examine and analyse problems with measures of central tendency	M1, M2, M3
4	Make use of measures of dispersion for evaluation	M1, M2, M3, M4

Module Number	Headline	Total Hours	%age of questions	Blooms level	Remarks (if any)
1.	Diagram	10	35%	1	
2	Frequency Distribution	10	35%	1, 2,3,4	
3	Measures of Central Tendency	4	15%	1, 2,3,4	
4	Measures of Dispersion	4	15%	1, 2,3,4,5	
Total		28	100%		

Statistics Lab 1

Module 1

Construction of a table and the different components of a table. Diagrammatic representation of data: Line diagrams, Bar diagrams, Pie charts and divided-bar diagrams **(10 Hours)**

Module 2

Frequency Distributions- Attribute and variable; Frequency distribution of an attribute; Discrete and continuous variables; Frequency distributions of discrete and continuous variables; Bivariate and Multivariate Frequency Distributions. Diagrammatic representation of a frequency distribution: case of an attribute; case of a discrete variable: column diagram, frequency polygon and step diagram; case of a continuous variable: histogram and ogive. **(10-Hours)**

Module 3

Measures of Central Tendency Mean, Median and Mode **(4 Hours)**

Module 4

Measure of Dispersion Quartile Deviation, Standard Deviation **(4 Hours)**