



**MANAV RACHNA INTERNATIONAL INSTITUTE
OF RESEARCH AND STUDIES**

**(Deemed to be University under section 3 of
the UGC Act, 1956)**

Centre for Distance and Online Education

**CURRICULUM
AND
SCHEME OF EXAMINATION
B.A. Economics (Honours)**

**Three-Year Programme
(ONLINE DEGREE PROGRAMME)
AS PER NEP 2020**

Batch: 2024-2027 AND ONWARDS

Preamble

The Centre for Distance and Online Education has adopted relevance to the local, national, regional and global developmental needs with well-defined Program Educational Objectives (PEOs), Program Outcomes (POs) and Program Specific Outcomes (PSOs) at the program level and Course Outcomes (COs) at the individual course level.

The unique and vibrant curriculum of undergraduate, postgraduate, and doctoral programs offered by the Department of Economics is committed to a liberal education philosophy and promotes quality teaching and research on contemporary demand. The department's vision is to attain the standard of excellence by imparting knowledge in fundamental areas and pushing research frontiers to address emerging global challenges through the holistic development of students into ethical and socially responsible competent economists. The mission of the department is to offer a curriculum which prepares students to acquire theoretical knowledge and applied skills to deal with economic enquiries, engage students in research on economic and public-policy issues for attaining development in a sustainable manner, and to impart holistic education by producing socially responsible and internationally competitive economists.

The Economics PEOs and POs aim to create globally competent economists by extending frontiers to meet current and future needs and introducing research to address the economic challenges to build up a sustainably developed world. It will help inculcate national ethos and values to the ignited minds for serving the community on economic or policy issues. The curriculum will enable students to apply an analytical framework for economic enquiry and decision-making by appropriate consideration of social and environmental welfare at local, regional, national and global levels. The curriculum is regularly reviewed for revisions or new courses that will help address the needs of academics, industry and society. Regular feedback on the curriculum is taken from all stakeholders, i.e., students, parents, faculty, and industry experts. The curriculum is benchmarked with reputed national and international institutions/Universities.

The robust curriculum aims to narrow the gap between academics and industry to increase employment opportunities and simultaneously push the frontiers of research to meet the local, regional, national and global demand for new forms of knowledge. The research cell “Center for Economic Policy Studies” of the Department of Economics is an initiative in this direction. The growing need for trained economists in Faridabad, being an industrial hub and Delhi NCR, is being met by the young and dynamic students of the Department of Economics who have professional competencies and in-depth domain-centric theoretical and applied knowledge. The content of the curriculum, as well as the teaching-learning process, is therefore planned and implemented to meet both local and regional demand for education.

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Centre for Distance and Online Education

VISION

Attain the standard of excellence by imparting knowledge in fundamental areas and pushing research frontiers to address emerging global challenges through the holistic development of students into ethical and socially responsible competent economists.

MISSION

1. Prepare students for acquiring theoretical knowledge and applied skills to deal with economic enquiries.
2. Research economic and public-policy issues for sustainably attaining development.
3. Impart holistic education by producing socially responsible and internationally competitive economists.

ABOUT THE DEPARTMENT

The ultimate touchstone of quality education is the quality culture permeating in any education Institution. In today's world of digitization, technical education stands at the crossroads of keeping pace with the emerging needs of humankind along with fast changing trends in governance and scientific development. The global transformation, trend of learning by doing, relevance to people and nation development – Manav Rachna International Institute of Research and Studies is the right place to gear up with a world class competitive edge. We are trusted to nurture juvenile minds and prepare them to deal with challenges of their future endeavors. Continuing the Legacy of our Founder Dr. O.P Bhalla, Manav Rachna has launched “Manav Rachna Centre for Distance and Online Education” to provide quality programmes to those students who are not able to draw benefits from conventional systems of Education. Seven programmes in different streams namely Computer Applications, Management, Commerce, Business Administration and Economics will be offered by university in online mode with specialization in different domains. In Today's opportunistic world specialized education is essential for successful professional life.

Manav Rachna Centre for Distance and Online Education has collaboration with prominent industry partners to provide global career opportunities to the students and prepare the students to acquire the increased technology intensive needs of today.

In addition, Manav Rachna Centre for Distance and Online Education provides a multidisciplinary approach for the students to shape their career inside and outside their domain of education and to meet the evolving needs of the society. The commitment of multidisciplinary education is to broaden the participation of students in higher education and leads to a more diverse community. In a multidisciplinary approach, students are inspired to select diverged courses from different disciplines to expand their knowledge, discover themselves through creative thinking and learn the skills of collaboration. The online programmes will help the students to achieve an academic degree along with flexibility and relaxation. These online programs hold equal academic value to as on- campus degree and help students in developing themselves into an industry ready as equivalent to a conventional degree. Students can perfectly reshape their career and future through impeccably designed online programmes. The renowned faculty, cutting – edge advanced curriculum, technology driven and a remarkable content delivery will be helpful in the successfully implementation of online programs.

A. PROGRAM EDUCATIONAL OBEJCTIVES (PEO'S)

PEO-1: Create globally competent economists by extending frontiers to meet current and future needs.

PEO-2: Introduce research addressing the economic challenges to build a sustainably developed world.

PEO-3: Pursue lifelong learning to prepare students holistically for various careers as proficient economists.

PEO-4: Inculcate national ethos and values in the ignited minds to serve the community on economic or policy issues.

B. Program Outcomes for BA Economics & BA Economics (Honours)

PROGRAM OUTCOMES (PO'S)

PO-1: To provide students with a strong foundation in economic theories, concepts, and models.

PO-2: Gain knowledge of economics for insight into current economic scenarios' complexities, dynamics and challenges.

PO-3: Equip students in methodology related to Research and Statistics.

PO-4: Comprehend the empirical applications using relevant quantitative techniques to support contemporary economic arguments.

PO-5: Apply an analytical framework for economic enquiry and decision-making by appropriately considering social and environmental welfare.

PROGRAM SPECIFIC OUTCOMES (PSO'S)

PSO-1: Accomplish a deep understanding of core economic principles to relate to various real-world issues.

PSO-2: Develop analytical aptitude with modern quantitative tools necessary to understand the economic arguments.

PSO-3: Instill lifelong learning skills for policy modelling and analysis of factual issues of the economy.

Articulation Matrix (mapping is labelled as strongly with 3, moderately with 2 or low with 1)

	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
PEO-1	3	3	3	3	3	3	3	3
PEO-2	3	3	3	3	3	3	3	3
PEO-3	3	3	2	2	3	3	2	3
PEO-4	2	2	2	3	3	2	3	3

SEMESTER AND CHOICE BASED CREDIT SYSTEM

Credit based system of study and student's performance/progress is measured by the number of credits that he/she has earned, i.e. completed satisfactorily. Based on the course credits and grade obtained by the student, grade point average is calculated.

a. Course credits assignment

Each course has a certain number of credits assigned to it depending upon its duration in periods for lecture, tutorial and practical/field practice in a week. A few courses/activities may have without credit(s) and are referred to as Audit Pass courses, which are mandatory to pass as a partial fulfillment of award of the degree.

b. Earning of credits

At the end of every course, a grade shall be awarded in each course for which a student has registered. On obtaining a minimum Pass-grade, students shall accumulate the course credits as Earned Credits. A student's performance shall be measured by the number of credits that he/she has earned and by the weighted grade point average. Grades obtained in the audit courses shall not be counted for computation of grade point average, however shall be mandatory to pass as a partial fulfillment of award of degree.

For Award of Degree of the programme B.A. (H) in Economics, he/she has to earn a minimum 140 credits during the 3- year duration of the programme in 6 semesters.

The total credits required to be earned have been further classified under two baskets of courses: 'Compulsory Courses' and 'Elective Courses'. **Total 108 credits required to be earned under Compulsory Courses basket and 32 credits under Elective Courses basket.**

Compulsory Courses baskets are required to be qualified and cleared/pass by students enrolled under the program, and the same are semester-wise listed in the study scheme along with credits assigned to each course.

Under Elective Courses Basket, there will be three types of courses:

- Semester-wise Discipline-specific/Inter-disciplinary/Generic courses offered by the department itself.
- Open/inter-disciplinary courses offered at the level of Institute/University, and notified from the office of Dean- Academics.
- Massive Open Online Courses (MOOCs) available on SWAYAM platform or any other platform as recommended by UGC/AICTE and notified from the office of Dean- Academics.

Each course shall have credits assigned to it. Student shall be required to register courses every semester for as many courses/credits specified under Elective Courses basket depending upon his/her interest, capability/pace of learning and availability of time slot (without any clash in time table) to earn all required total credits under the Elective Courses basket during the entire program duration.

However, for registration of courses [including courses under Compulsory Courses basket, Elective Courses basket and Previous Semester Courses (wherein he/she was declared in-eligible on the basis of attendance or he/she could not clear the course within permissible given chances), if any, the maximum limit in a semester shall be 30 credits.

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BA(H) Economics

SEMESTER I						
Course Type	Course Code	Course Title	Marks			Credits
			Internal Assessment	End Semester Examination	Total	
Foundation	04.5SET100C04	Environmental Studies*	30	70	100	4
Core	04.5ECO101C01	Introductory Microeconomics	30	70	100	4
Core	04.5ECO102C01	Statistical Methods in Economics-I	30	70	100	4
Ability Enhancement	04.5FLFR100E04	Foreign Language-I (French)	30	70	100	3
	04.5FLGR100E04	Foreign Language-I (German)	30	70	100	
	04.5FLSP100E04	Foreign Language-I (Spanish)	30	70	100	
Ability Enhancement	04.5SBSS100C04	Indian Knowledge System	30	70	100	2
2 Skill Enhancement	04.5CDC171C05	Professional Communication-I	30	70	100	1
	04.5ECO111C01	Introduction to Data	30	70	100	2
Ability Enhancement	04.5QA100C04	Introduction to Sustainable Development Goals	30	70	100	2
		TOTAL COMPULSORY CREDITS			1000	22

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SEMESTER II						
Course Type	Course Code	Course Title	Marks			Credits
			Internal Assessment	End Semester Examination	Total	
Core	O4.5ECO201C01	Introduction to Macroeconomics	30	70	100	4
Core	O4.5ECO202C01	Mathematical Economics - I	30	70	100	4
Core	O4.5ECO203C01	Statistical Methods in Economics - II	30	70	100	4
Ability Enhancement	O4.5FLFR200E04	Foreign Language-II (French)	30	70	100	3
	O4.5FLGR200E04	Foreign Language-II (German)	30	70	100	
	O4.5FLSP200E04	Foreign Language-II (Spanish)	30	70	100	
Skill Enhancement	O4.5CDC286C05	Professional Communication-II	30	70	100	1
						16
Generic Elective	O4.5ECO204E03	Government & Politics in India	30	70	100	3
		TOTAL CREDITS				19

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SEMESTER III						
Course Type	Course Code	Course Title	Marks			Credits
			Internal Assessment	End Semester Examination	Total	
Core	05.0ECO101C01	Intermediate Microeconomics	30	70	100	4
Core	05.0ECO102C01	Intermediate Macroeconomics	30	70	100	4
Core	05.0ECO103C01	Mathematical Economics - II	30	70	100	4
2 Ability Enhancement	05.0ECO151C04	Data Analysis and visualization using Excel and SPSS	30	70	100	2
	05.0SBSS100C04	Universal Human Values	30	70	100	2
Skill Enhancement	05.0CDC186C05	Professional Competency Enhancement-I	30	70	100	1
CDC	05.0ECO152C06	Internship	30	70	100	2
(ANY ONE)	05.0ECO153C06	Field Visit	30	70	100	
						19
Discipline Elective	05.0ECO104E02	Agriculture Economics	30	70	100	3
Generic Elective	05.0ECO105E03	Financial Accounting in India	30	70	100	3
(ANY ONE)	05.0ECO106E03	Indian Economy I	30	70	100	
		TOTAL CREDITS				25

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SEMESTER IV						
Course Type	Course Code	Course Title	Marks			Credits
			Internal Assessment	End Semester Examination	Total	
Core	05.0ECO201C01	International Economics - I	30	70	100	4
Core	05.0ECO202C01	Economic Growth and Development	30	70	100	4
Core	05.0ECO203C01	Public Economics	30	70	100	4
Ability Enhancement (Any 1)	05.0ECO204C04	Quantitative and Logical Reasoning	30	70	100	2
	05.0ECO251C04	Data Analysis and visualization using R and Python	30	70	100	
Audit Pass	05.0SAHS100C09	Sports and Yoga	30	70	100	0
Skill Enhancement	05.0CDC286C05	Placement Preparatory Programme	30	70	100	1
						15
Discipline Elective	05.0ECO205E02	History of Economic Thought	30	70	100	3
Generic Elective	05.0ECO206E03	Indian Economy II	30	70	100	3
		TOTAL CREDITS				21

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SEMESTER V

Course Type	Course Code	Course Title	Marks			Credits
			Internal Assessment	End Semester Examination	Total	
Core	05.5ECO101C01	International Economics - II	30	70	100	4
Core	05.5ECO102C01	Development Economics	30	70	100	4
CDC	05.5ECO151C06	Industry Training	30	70	100	2
(Choose any 1)	05.5ECO152C06	Community Connect	30	70	100	
						10
2 Discipline Elective	05.5ECO153E02	Data Analysis through - Statistical Software - STATA	30	70	100	3
2 Discipline Elective	05.5ECO103E02	Research Methodology	30	70	100	3
Generic Elective	05.5ECO104E03	Understanding Sustainable Development Goals	30	70	100	3
		TOTAL CREDITS				19

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SEMESTER VI

Course Type	Course Code	Course Title	Marks			Credits
			Internal Assessment	End Semester Examination	Total	
Core	05.5ECO201C01	Basic Econometrics	30	70	100	4
Core	05.5ECO202C01	Monetary Economics	30	70	100	4
						8
2 Discipline Elective	05.5ECO203E02	Comparative Economic Development	30	70	100	3
2 Discipline Elective	05.5ECO204E02	Environment & Resource Economics	30	70	100	3
Term Paper#	05.5ECO251E08	Term Paper	30	70	100	6
Generic Elective	05.5ECO205E03	Economics of Education	30	70	100	3
		TOTAL CREDITS				17

SEMESTER I

Manav Rachna International Institute of Research and Studies (MRIIRS)
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ENVIRONMENTAL STUDIES
COURSE CODE: O4.5SET100C04

Periods/week.	Credits	Maximum marks: 100
L: 3 T:0 P:0	3+1*	Continuous Assessment: 30
Duration of examination: 3Hrs		End Semester Examination: 70
Pre-requisites: NIL		
Course Type: Compulsory Courses		

Course Outcomes

After completion of this course, the students will be able to:

- O4.5SET100C04.1. appreciate the historical context of human interactions with the environment.
- O4.5SET100C04.2. understand the concept of natural resources and explain sustainable development, its goals, targets, challenges and global strategies for sustainable development.
- O4.5SET100C04.3. develop a critical understanding of the environmental issues, pollution and its types.
- O4.5SET100C04.4. understand the concepts of ecosystems, biodiversity and conservation.
- O4.5SET100C04.5. gain a comprehensive knowledge of climate change, its science and response measures.
- O4.5SET100C04.6. develop a critical understanding of the complexity of environmental management and learn about how the nations of the world work together for the environment.

PART- A

Unit 1: Humans and the Environment

- 1.1 The man-environment interaction, Great ancient civilizations and the environment; Industrial revolution and its impact on the environment; Population growth and natural resource exploitation.
- 1.2 Environmental Ethics and emergence of environmentalism.

Unit 2: Natural Resources and Sustainable Development

- 2.1 Overview and classification of natural resources
- 2.2 Biotic resources
- 2.3 Soil and mineral resources
- 2.4 Energy resources
- 2.5 Introduction to sustainable development: Sustainable Development Goals (SDGs)- targets and indicators, challenges and strategies for SDGs.

Unit 3: Environmental Issues

- 3.1 Local, Regional and Global level environmental issues.
- 3.2 Land use and Land cover change: land degradation, deforestation, desertification, urbanization. Biodiversity loss: past and current trends, impact.
- 3.3 Ozone layer depletion; Climate change. Disasters – Natural and Man-made (Anthropogenic).

Unit 4: Conservation of Biodiversity and Ecosystems

- 4.1 Biodiversity and its distribution: Biodiversity as a natural resource; Levels and types of biodiversity; Biodiversity in India and the world; Biodiversity hotspots; Species and ecosystem threat categories.
- 4.2 Ecosystems and ecosystem services
- 4.3 Threats to biodiversity and ecosystems
- 4.4 Major conservation policies

PART-B

Unit 5: Environmental Pollution and Health

5.1 Understanding pollution: Production processes and generation of wastes; Assimilative capacity of the environment; Definition of pollution; Point sources and non-point sources of pollution.

5.2 Air pollution: Sources of air pollution; Primary and secondary pollutants; Indoor air pollution; Adverse health impacts of air pollutants; National Ambient Air Quality Standards.

5.3 Water pollution: Sources of water pollution; River, lake and marine pollution, groundwater pollution; water quality Water quality parameters and standards; adverse health impacts of water pollution on human and aquatic life.

5.4 Soil pollution and solid waste: Soil pollutants and their sources; Solid and hazardous waste; Impact on human health.

5.5 Noise pollution: Definition of noise; Unit of measurement of noise pollution; Sources of noise pollution; Noise standards; adverse impacts of noise on human health.

5.6 Thermal and Radioactive pollution: Sources and impact on human health and ecosystems.

Unit 6: Climate Change: Impacts, Adaptation and Mitigation

6.1 Understanding climate change

6.2 Impacts, vulnerability and adaptation to climate change

6.3 Mitigation of climate change: Synergies between adaptation and mitigation measures; Green House Gas (GHG) reduction vs. sink enhancement

Unit 7: Environmental Management

7.1 Introduction to environmental laws and regulation

7.2 Environmental management system: ISO 14001 Concept of Circular Economy, Life cycle analysis; Cost-benefit analysis

7.3 Environmental audit and impact assessment; Environmental risk assessment Pollution control and management; Waste Management- Concept of 3R (Reduce, Recycle and Reuse) and sustainability; Ecolabeling /Ecomark scheme

Unit 8: Environmental Treaties and Legislation

8.1 An overview of instruments of international cooperation; bilateral and multilateral agreements; conventions and protocols

8.2 Major International Environmental Agreements

8.3 Major Indian Environmental Legislations:

8.4 Major International organizations and initiatives

List of Suggested Textbooks/Reference Books:

1. Fisher, Michael H. (2018) An Environmental History of India- From Earliest Times to the Twenty-First Century, Cambridge University Press.

2. Headrick, Daniel R. (2020) Humans versus Nature- A Global Environmental History, Oxford University Press.

3. Hughes, J. Donald (2009) An Environmental History of the World- Humankind's Changing Role in the Community of Life, 2nd Edition. Routledge.

4. Perman, R., Ma, Y., McGilvray, J., and Common, M. (2003) Natural Resource and Environmental Economics. Pearson Education.

5. Simmons, I. G. (2008) Global Environmental History: 10,000 BC to AD 2000. Edinburgh University Press.

6. Chiras, D. D and Reganold, J. P. (2010) Natural Resource Conservation: Management for a Sustainable Future. 10th edition, Upper Saddle River, N. J. Benjamin/Cummins/Pearson.

7. John W. Twidell and Anthony D. (2015) Renewable Energy Sources, 3rd Edition, Weir Publisher (ELBS)
8. William P. Cunningham and Mary A. (2015) Cunningham Environmental Science: A Global Concern, Publisher (Mc-Graw Hill, USA)
9. Manahan, S.E. (2022). Environmental Chemistry (11th ed.). CRC Press. <https://doi.org/10.1201/9781003096238>
10. Varghese, Anita, Oommen, Meera Anna, Paul, Mridula Mary, Nath, Snehlata (Editors) (2022) Conservation through Sustainable Use: Lessons from India. Routledge.
11. Ahluwalia, V. K. (2015). Environmental Pollution, and Health. The Energy and Resources Institute (TERI).
12. Adenle A., Azadi H., Arbiol J. (2015) Global assessment of technological innovation for climate change adaptation and mitigation in developing world, Journal of Environmental Management, 161 (15): 261-275.
13. Richard A. Marcantonio, Marc Lame (2022) Environmental Management: Concepts and Practical Skills. Cambridge University Press.
14. Kanchi Kohli and Manju Menon (2021) Development of Environment Laws in India, Cambridge University Press.

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

- (i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

- (ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Manav Rachna International Institute of Research and Studies (MRIIRS)

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INTRODUCTORY MICROECONOMICS

COURSE CODE: O4.5ECO101C01

Periods/week. Credits
L: 3 T: 1 P: 0. 4
Duration of examination: 3Hrs
Pre-requisites: NIL
Course Type: Compulsory Courses

Maximum marks: 100
Continuous Assessment: 30
End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

- O4.5ECO101C01.1: Understand how scarcity, opportunity costs and cost/benefit analysis impact economic behaviour.
- O4.5ECO101C01.2: Interpret consumer behaviour theory in detail.
- O4.5ECO101C01.3: Infer behaviour of firm in the theory of production, cost and revenue.
- O4.5ECO101C01.4: Understand the impact of monopolies versus competitive equilibrium on economic outcomes.

Part-A

Unit-1: Introduction

- 1.1. Principles of Economics
- 1.2. Economic problem: - Scarcity and Choice
- 1.3. Central Problems of the economy, Positive and Normative Analysis
- 1.4. Production Possibility Curve: - Definition, Properties, Rotation and shifts of PPC

Unit-2: Consumer's Behaviour

- 2.1. Consumer's equilibrium – Cardinal Approach (Meaning of utility, Law of diminishing marginal utility, Conditions of consumer's equilibrium using marginal utility analysis.)
- 2.2. Consumer's equilibrium – Ordinal Approach (Indifference Curve and its properties, Budget Line, Conditions of Consumer's equilibrium).
- 2.3. Derivation of Demand Curve through Cardinal and Ordinal Preferences.

Part-B

Unit-3: Production and Cost

- 3.1. Production Function in traditional theory.
- 3.2. Law of Variable Proportions: Derivation of short run total, Average and Marginal products
- 3.3. Short run Cost: Total fixed cost, Total variable cost, Total cost, Average fixed cost, Average variable cost, Average total cost, and Marginal cost
- 3.4. Costs of production as Derived functions

Unit 4: Market Structure

- 4.1. Market structure and Classifications: - Perfect Competition, Monopoly, Monopolistic Competition, Oligopoly
- 4.2. Effects of shift in Demand and Supply in Perfect and Imperfect competition
- 4.3. Price-Output determination under Perfect Competition
- 4.4. Price-Output determination under Monopoly

List of Suggested Textbooks/Reference Books:

- Mankiw, N.G. (2015) Principles of Microeconomics. Stanford, CT: Cengage Learning.
- Varian, H.R. (2020) Intermediate microeconomics: A modern approach. New York: W.W. Norton and Company.
- Pindyck, R.S. and Rubinfeld, D.L. (2005) Microeconomics. Upper Saddle River, NJ: Pearson Prentice Hall.
- Frank, R.H. (2020) Microeconomics and behaviour. New York, NY: McGraw-Hill Education.

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

- (i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

- (ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

.

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PS O-1	PSO-2	PSO-3
O4.5ECO101C01 .1	3	1	1	3	3	3	3	1
O4.5ECO101C01 .2	3	1	1	3	2	3	2	1
O4.5ECO101C01 .3	3	2	1	3	3	3	2	1
O4.5ECO101C01 .4	3	2	1	3	3	3	3	1

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STATISTICAL METHODS IN ECONOMICS-I
COURSE CODE: O4.5ECO102C01

Periods/week	Credits	Maximum marks:100
L:3 T:1 P:0	4	Continuous Assessment: 30
Duration of examination:3Hrs		End Semester Examination:70
Pre-requisites: NIL		
Course Type: Compulsory Courses		

Course Outcomes

After completion of this course, the students will be able to:

- O4.5ECO102C01.1: Apply Statistical Concepts, Techniques, and Methodologies to Real-World Data Sets
- O4.5ECO102C01.2: Enhance Critical Thinking and Problem-Solving Abilities Through the Application of Statistical Techniques
- O4.5ECO102C01.3: Develop Effective Communication Skills, to Present Statistical Findings and Interpretations
- O4.5ECO102C01.4: Development of a Curious and Analytical Mindset for Further Studies or Professional Applications in Fields requiring Statistical Analysis.

Part - A

Unit 1: Central Tendency

- 1.1. Basic Concepts of Statistics: Types of Data, Variables: Qualitative and Quantitative.
- 1.2. Introduction to Data Distribution and its Properties
- 1.3. Characteristics of a Good Measure of Central Tendency
- 1.4. Relationship Between Mean, Median, and Mode
- 1.5. Positional Averages: Quartiles, Deciles, and Percentiles.

Unit 2: Dispersion

- 2.1. Measures of Dispersion: Range, Interquartile Range, Variance, Standard Deviation, Mean Deviation, and Quartile Deviation
- 2.2. Range-Based Measures of Dispersion: Mean Deviation, Coefficient of Variation, and Interquartile Range
- 2.3. Empirical Rule and its Application in Estimating Data Proportions using the Normal Distribution.

Unit 3: Moments, Skewness, and Kurtosis

- 3.1. Moment Generating Function: Understanding Moments about Arbitrary Origin, Raw Moments, and Central Moments
- 3.2. Skewness: Measurement using Absolute and Relative Measures
- 3.3. Kurtosis: Understanding its Measurement and Implications

Part - B

Unit 4: Bivariate Analysis

- 4.1. Analysis of Bivariate Data: Scatter Diagram and Graphical Representation
- 4.2. Exploring Correlation: Karl Pearson Correlation, Coefficient of Correlation, and Probable Error
- 4.3. Understanding the Coefficient of Determination, Spearman's Rank Correlation, and Basics of Partial and Total Correlations.
- 4.4. Overview of Regression, Relation Between Correlation and Regression Coefficient

Unit 5: Index Number

- 5.1. Importance of Constructing Index Numbers: Price Index Versus Value Index
- 5.2. Comparative Analysis of Index Number Construction Methods: Fisher, Laspeyres, And Paasche Methods
- 5.3. Consistency Tests for Index Numbers: Time Reversal, Factor Reversal, and Circular Test
- 5.4. Addressing Problems Associated with Index Numbers, Including a Comparison with Implicit Price Deflators.

List of Suggested Textbooks/Reference Books:

- Jay L. Devore (2012) *Probability and Statistics for Engineering and the Sciences*, 8th Edition, Cengage Learning
- David Anderson, Dennis Sweeney, Thomas Williams (2010) *Statistics for Business and Economics*, 11th Edition, Cengage Learning
- Merchant, R. *et al.* (1998) *Applied Statistics for business and economics, third edition*, Allen L. Webster. Boston: Irwin/McGraw-Hill.
- Spiegel, M.R., Schiller, J.J. and Srinivasan, R.A. (2013) *Probability and statistics*. New York: Schaum.
- Paul, H. *et al.* (2016) *Statistics for Economics: Compiled from statistics for Business and Economics, Eighth Edition, Global edition*, Paul Newbold, William L. Carlson and Betty M. Thorne. Harlow: Pearson.
- Keller, G. (2023) *Statistics for Management and Economics*. Boston, MA: Cengage.
- Levine, D., Szabat, K. and Stephan, D. (2020) *Business statistics: A first course*. Hoboken, NJ: Pearson.
- Agresti, A., Franklin, C.A. and Klingenberg, B. (2023) *Statistics: The art and science of learning from Data*. Harlow: Pearson.

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

- (i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

- (ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests
Surprise questions during lectures/Class Performance
Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O4.5ECO102C01.1			3	2			2	
O4.5ECO102C01.2			3	2			2	
O4.5ECO102C01.3			3	3			1	
O4.5ECO102C01.4	1		2	2			1	

Manav Rachna International Institute of Research and Studies (MRIIRS)

(Deemed to be University under Section 3 of the UGC Act 1956)

INDIAN KNOWLEDGE SYSTEM

COURSE CODE: O4.5SBSS100C04

Periods/week	Credits	Maximum marks: 100
L:1 T:1 P:0	2	Continuous Assessment: 30
Duration of examination: 2Hrs		End Semester Examination: 70
Pre-requisites: NIL		
Course Type: Compulsory Courses		

Course Outcomes

After completion of this course, the students will be able to:

O4.5SBSS100C04.1: This course will provide the scientific value of the traditional knowledge of Bhārata.

O4.5SBSS100C04.2: To sensitize the students to the contributions made by ancient Indians schools.

O4.5SBSS100C04.3: The course will promote the youths to do research in the various fields of Bhāratīya knowledge system.

O4.5SBSS100C04.4: It will introduce the relevance of the Indian Knowledge System to the world.

O4.5SBSS100C04.5: Know the contribution of the Indian Knowledge system in science, engineering, and technology.

Module 1: Introduction to IKS

- 1.1. What is Indian Knowledge System
- 1.2. Indian Culture & Civilization
- 1.3. Indian Architecture
- 1.4. Indian Philosophical System

Module 2: Kalas and Vidyas of Ancient India

- 2.1. 64 Kalas
- 2.2. 14 Vidyas (Vedas, UpaVedas, Vedangas)

Module 3: Introduction to Health Regimen

- 3.1. Understanding Swastha vritta
- 3.2. Healthy regimen to maintain state of wellbeing Dinacharya
- 3.3. Daily regimen including Daily detoxification, exercise, Intake of Food, Water, Air and Sunlight, work and ergonomics, Rest and sleep hygiene
- 3.4. Ritu charya, the seasonal regimen
- 3.5. Sadvritta and the concept of social wellbeing
- 3.6. Concept of Shadrasa in choosing appropriate nourishment to the body and mind.

Module 4: Introduction to Indian Psychology

- 4.1. Concept of Manas in Ayurveda and understanding Mind Body harmony
- 4.2. Triguna based Psychology in Ayurveda and Yoga
- 4.3. Influence of Tri dosha on Mind, Mind body intellect and consciousness complex
- 4.4. Understanding Consciousness and solution to issues within Human Mind

Module 5: Engineering, Technology and Architecture

- 5.1. Pre-Harappan and Sindhu Valley Civilization
- 5.2. Laboratory and Apparatus, Juices, Dyes
- 5.3. Paints and Cements
- 5.4. Glass and Pottery

List of Suggested Textbooks/Reference Books

- Mahadevan, B., Bhat Vinayak Rajat, Nagendra Pavana R.N. (2022), "Introduction to Indian Knowledge System: Concepts and Applications", PHI Learning Private Ltd. Delhi.
- Pride of India: A Glimpse into India's Scientific Heritage, Samskrita Bharati, New Delhi.
- Sampad and Vijay (2011). "The Wonder that is Sanskrit", Sri Aurobindo Society, Puducherry.
- Acarya, P.K. (1996). Indian Architecture, Munshiram Manoharlal Publishers, New Delhi.
- Kapoor Kapil, Singh Avadhesh (2021). "Indian Knowledge Systems Vol – I & II", Indian Institute of Advanced Study, Shimla, H.P.
- Dasgupta, S. (1975). A History of Indian Philosophy- Volume 1, Motilal Banarsidass, New Delhi.
- P Lofker, K. (1963). Mathematics in India, Princeton University Press, New Jersey, USA"

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

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Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

- (ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

.

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O4.5SBSS100C04. 1	3	3	3		3	3		3
O4.5SBSS100C04. 2	3		2	3		3	3	3
O4.5SBSS100C04. 3		3	2	3	2	3	3	2
O4.5SBSS100C04. 4	3	2	2		3	3	3	2
O4.5SBSS100C04. 5	2			3	2	2	2	3

Manav Rachna International Institute of Research And Studies (MRIIRS)

(Deemed to be University under Section 3 of the UGC Act 1956)

**INTRODUCTION TO DATA
COURSE CODE: O4.5ECO111C01**

Periods/week Credits
L:1 T:1 P:0 2
Duration of examination:3Hrs
Pre-requisites: NIL
Course Type: Compulsory Courses

Maximum marks: 100
Continuous Assessment: 30
End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

- O4.5ECO111C01.1: Gain Knowledge of Different Types of Data
- O4.5ECO111C01.2: Organize and Arrange Data Based on Specific Needs
- O4.5ECO111C01.3: Use Excel for Basic Data Visualization
- O4.5ECO111C01.4: Prepare Descriptive Statistics Table of Variables

Part-A

Unit-1: Types of Data

- 1.1. Definition of Data, Types of Data: Qualitative and Quantitative, Levels of Measurement: Nominal, Ordinal, Interval, and Ratio
- 1.2. Data Sources: Primary and Secondary; Data Collection Methods: Surveys and Questionnaires, Observations, Experiments, Case Studies

Unit-2: Organize and Arrange Data

- 2.1. Data Organization, Data Cleaning, Data Transformation
- 2.2. Sorting and Filtering Data, Grouping and Ungrouping Data

Part-B

Unit-3: Excel for Basic Data Visualization

- 3.1. Basics of Excel: Cells, Rows, Columns, and Worksheets, Data Entry in Excel
- 3.2. Creating Charts and Graphs, Customizing Charts and Graphs, Bar Plot, Pie Plot

Unit 4: Descriptive Statistics

- 4.1. Measures of Central Tendency: Mean, Median, Mode
- 4.2. Measures of Dispersion: Range, Variance, Standard Deviation

List of Suggested Textbooks/Reference Books:

- Maheshwari, A. (2024). Data analytics made accessible. Seattle: Amazon Digital Services.
- Mize, E. (2019). Data Analytics: The Ultimate Beginner's Guide to Data Analytics. Venture Ink.
- Guerrero, H., Guerrero, R., & Rauscher. (2019). Excel data analysis. Springer International Publishing.
- Gupta, S. P., & Gupta, M. P. (2009). Business statistics. Sultan Chand & Sons, New Delhi.

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

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(i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

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(ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

.

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O4.5ECO111C01 .1		3	3		2		3	1
O4.5ECO111C01 .2		3	3		2		3	1
O4.5ECO111C01 .3		3	1		2		3	1
O4.5ECO111C01 .4	3	3	1	3	3	3	3	2

MANAV RACHNA INTERNATIONAL INSTITUTE OF RESEARCH AND STUDIES
(Deemed to be University under section 3 of the UGC Act 1956)

INTRODUCTION TO SUSTAINABLE DEVELOPMENT GOALS
COURSE CODE: O4.5QA100C04

Periods/Week

L: T: P

2 0 0 Credits: 2

Max. Marks: 100

Continuous Evaluation: 30

End Semester Exam: 70

Duration of Examination: 30 Minutes

Course Outcomes:

The student will be able to:

CO1: Describe the UN 17 Sustainable Development Goals (SDGs) and their importance.

CO2: Identify major Sustainability Challenges by understanding the Environmental, Social and Economic dimensions of SDGs.

CO3: Demonstrate an ability to participate in building Sustainable Communities by applying the concepts of Sustainable Development.

CO4: Recognize the global implications of their actions by understanding their social, environmental, and economic responsibility as future professionals and citizens.

Unit 1: Introduction to Sustainable Development

- 1.1 Introduction to sustainable development, aspects of sustainability, developments vs sustainable development
- 1.2 Transition from Millenium Development Goals (MDPs) to Sustainable Development Goals (SDGs), Development and adoption of SDGs by the United Nations, India and SDGs: A vision for 2030
- 1.3 SDGs overview: Goals and targets, Status (Global and Indian), overview of key global sustainability challenges (inequality, climate change, poverty) including modern world social, environmental and economic structures and crises.

Sample Assignment/Case Study Topics:

Short essay on the significance of sustainable development.

Summary of each of the 17 SDGs and their importance.

Unit 2: Overview of Goal 1: No Poverty, Goal 2: Zero Hunger and Goal 3: Good Health & Well Being

- 2.1 Understanding SDG 1 and its targets, understanding poverty: absolute, relative and multidimensional, Causes of poverty, Key indicators of poverty, global and local perspectives: rural and urban poverty, eradication of poverty for access to basic services, role of community anti-poverty programmes and strategies for inclusive economic growth.
- 2.2 Understanding SDG 2 and its targets, types of hunger and malnutrition: global and local perspectives, the global hunger index, components of food security, food insecurity: barriers to food security, solutions to improve food access and support local farmers, emerging trends in sustainable agriculture and food security.
- 2.3 Understanding SDG 3 and its targets, means of implementation for the targets, sustainable health and lifestyle practices, global health trends, threats and challenges, public health strategies and systems for controlling communicable and non-communicable diseases, maternal and child health: reducing maternal and child mortality rates, mental health: awareness and access to care, occupational health: safety and work-life balance, reproductive health and rights, environmental health and protection, health education and promotion, policies for inclusive and equitable health access.

Sample Assignment/Case Study Topics:

Case study analysis on a successful poverty or hunger alleviation initiative.
Campus Rally on Zero Food Wastage
Analysis of Food Wastage across Campus: All Cafeterias, Hostels
Analysis of Current Health Initiatives in India
Awareness programmes on Mental Health

Unit 3: Overview of Goal 4: Quality Education, Goal 5: Gender Equality and Goal 6: Clean Water & Sanitation

- 3.1 Understanding SDG 4 and its targets, importance of quality education for sustainable development, strategies for inclusive and equitable education, role of digital education and e-learning in today's scenario, importance of vocational training and skills development, research and innovation in quality education.
- 3.2 Understanding SDG 5 and its targets, gender equality and its impact on sustainable development, basic concepts of gender, gender identity and gender roles, international conventions and frameworks supporting gender equality, indicators and metrics for measuring gender equality progress, role of community engagement and awareness training for gender equality.
- 3.3 Understanding SDG 6 and its targets, importance of water and sanitation for sustainable development, strategies to improve access to safe drinking water, factors affecting water quality, importance of sanitation and hygiene for health, water conservation: wastewater management & water resource management, sustainable agriculture practices to conserve water, role of digital tools for water management.

Sample Assignment/Case Study Topics:

Research paper on impact of quality education initiatives in India
Essay on the challenges and strategies for achieving gender equality or reducing inequality
Case studies on sustainable water and energy projects
Institution wide Pledge on Water Conservation

Unit 4: Overview of Goal 7: Affordable & Clean Energy, Goal 8: Decent Work & Economic Growth, Goal 9: Industry, Innovation & Infrastructure and Goal 11: Sustainable Cities & Communities

- 4.1 Understanding SDG 7 and its targets, types of energy sources & technologies, importance of clean energy and energy efficient technologies for sustainable development, sustainable energy management policies.
- 4.2 Understanding SDG 8 and its targets, economic growth & job creation for sustainable development, factors influencing economic growth, strategies for inclusive growth, global employment trends and challenges.
- 4.3 Understanding SDG 9 and its targets, role of innovation & infrastructure in sustainable development, strategies for sustainable industrialization, concept of industry 4.0, best practices for fostering innovation and technological advancements.
- 4.4 Understanding SDG 11 and its targets, trends & patterns of urbanization & sustainable city planning, social, economic & environmental challenges of urbanization, impact of rapid urbanization on infrastructure & services, importance of green & public spaces for urban quality of life.

Sample Assignment/Case Study Topics:

Analysis of ILO Reports on global employment trends
Examples of successful infrastructure and sustainable projects
Case study analysis on lessons learnt from successful urban initiatives
Campus wide Awareness on Energy conservation

Unit 5: Overview of Goal 12: Responsible Consumption & Production, Goal 13: Climate Action, Goal 14: Life Below Water and Goal 15: Life on Land

- 5.1 Understanding SDG 12 and its targets, importance of sustainable consumption & production for overall sustainability, strategies to promote sustainable consumption, challenges & importance of effective waste

- management practices (reduce, reuse, recycle), concept of green procurement practices and its benefits, strategies for raising awareness in promoting sustainable consumption.
- 5.2 Understanding SDG 13 and its targets, importance of combating climate change for sustainable development, evidence & indicators of climate change, impact of climate change in public health, strategies for climate resilient agriculture, importance of education in promoting climate action.
 - 5.3 Understanding SDG 14 and its targets, importance of oceans, seas & marine resources/ diversity for global sustainability, sources & types of marine pollution, its Impact on ecosystems & human health, strategies for reducing & managing marine pollution, balancing economic development with marine conservation, importance of education & awareness in marine conservation.
 - 5.4 Understanding SDG 15 and its targets, importance of terrestrial ecosystems & biodiversity for sustainable development, sustainable forest management & biodiversity conservation practices, combating desertification, strategies for wildlife conservation, role of technology in monitoring & conserving terrestrial ecosystems.

Sample Assignment/Case Study Topics:

- Examples of successful sustainable consumption and production initiatives
- Best practices followed by successful action initiatives
- Examples of successful marine conservation and sustainable use initiatives
- Case study analysis on successful conservation and sustainable land management initiatives

Unit 6: Overview of Goal 10: Reduced Inequalities, Goal 16: Peace, Justice & Strong Institutions, Goal 17: Partnership for the Goals

- 6.1 Understanding SDG 10 and its targets, importance of reducing inequality for sustainable development, types of inequality (Economics, Social, Political), role of education in reducing inequality, best practices for implementing & scaling effective inequality reduction strategies.
- 6.2 Understanding SDG 16 and its targets, importance of peace, justice & strong institutions for sustainable development, strategies for conflict prevention, resolution & peace building, strategies for promoting fair & effective justice systems, strategies for strengthening democratic & inclusive institutions.
- 6.3 Understanding SDG 17 and its targets, importance of global partnerships for sustainable development, strategies for building and maintain effective partnerships, strategies for integrating the SDGs into national & local development plans. Role of governments, NGOs, and private sector in achieving SDGs.

Sample Assignment/Case Study Topics:

- Case study analysis on successful policies and programs for reducing inequality
- Examples of successful initiatives promoting peace, justice and strong institutions
- Examples of successful global partnerships, successful initiatives & best practices in global partnerships
- Group project on developing a partnership strategy for achieving a specific SDG

Assessment of Outcomes:

Continuous Evaluation

End Semester Exam

Suggested Readings:

1. The Sustainable Development Goals in Higher Education: A Transformative Agenda? 1st ed. 2021 Edition, by Wendy Steele (Author), Lauren Rickards (Author)
2. SDGs, Transformation, and Quality Growth: Insights from International Cooperation (Sustainable Development Goals Series) 1st ed. 2022 Edition, by Akio Hosono (Author)
3. United Nations document on the 2030 Agenda for Sustainable Development.
4. NPTEL course link: Education for Sustainable Development:
https://onlinecourses.nptel.ac.in/noc22_hs61/preview
5. Coursera Course: The Sustainable Development Goals – A global, transdisciplinary vision for the future:
<https://www.coursera.org/learn/global-sustainable-development>

6. Coursera Course: The Age of Sustainable Development: <https://www.coursera.org/learn/sustainable-development>
7. Coursera Course: The Great Sustainability Transition: Global challenges, Local actions: <https://www.coursera.org/learn/sustainability-global-challenges-and-local-actions>
8. Coursera Course: Sustainable Development - Ideas and Imaginaries: <https://www.coursera.org/learn/sustainable-development-ideas-and-imaginaries>

Note (Guidelines for End Semester Examination paper setting):

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

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(ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Distribution of Continuous Evaluation:

Written Assignments/ Case Studies: 20%	(Course Outcome to be Assessed: CO1, CO2)
kinesthetic learning activities: 30%	(Course Outcome to be Assessed: CO3, CO4)
Class Performance: 20%	(Course Outcome to be Assessed: CO1, CO2, O3, CO4)
Attendance: 10%	

NOTE:

- Course coordinator shall share the Rubrics for assessment with all the course teachers.
- Written assignments may include essays, reports, reviews, written exercises, proposals etc.
- kinesthetic learning activities may include creative compositions (animations, short films/reels, models, websites, photographic analysis, sustainable designs etc), debates, awareness programmes, Road Show, Street Play, pledge, portfolio creation, field trips/work, workshops, seminars, voluntary work, demonstrations, role play, exhibitions and other related performances or presentations.

SEMESTER -II

Manav Rachna International Institute of Research and Studies (MRIIRS)

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INTRODUCTION TO MACROECONOMICS

COURSE CODE: O4.5ECO201C01

Periods/week Credits
L:3 T:1 P:0 4
Duration of examination: 3Hrs
Pre-requisites: NIL
Course Type: Compulsory Courses

Maximum marks: 100
Continuous Assessment: 30
End Semester Examination:70

Course Outcomes

After completion of this course, the students will be able to:

- O4.5ECO201C01.1: Describe the Circular Flow of Income and the Process of Income Multipliers that Influence these Flows.
O4.5ECO201C01.2: Define Key Macroeconomic Aggregates like Gross Domestic Product, National Income and Inflation.
O4.5ECO201C01.3: Identify the Determinants of Various Macroeconomic Aggregates and the Major Challenges Associated with the Measurement of these Aggregates.
O4.5ECO201C01.4: Construct the Aggregate Demand and Aggregate Supply Model of the Macro Economy and use it to Illustrate Macroeconomic Problems and Potential Monetary and Fiscal Policy Solutions.

Part-A

Unit-1: Introduction to Basic Concepts of Macro Economics

- 1.1. Meaning of Macro Economics, Importance of Macroeconomics and Central Issues in Macroeconomics
- 1.2. Circular Flow of Income in a Two, Three and Four Sector Economy.
- 1.3. Various Concepts of National Income, GDP and Personal Income, Nominal and Real GDP, Various Approaches to Measurement of National Income
- 1.4. Difficulties in Measurement of National Income and GDP as an Indicator of Social Welfare.

Unit-2: The Classical Theory of Income and Employment

- 2.1. The Classical Full Employment Model: Say's Law of Market, Wage-Price Flexibility and Full Employment.
- 2.2. Determination of Equilibrium Employment and Output in the Short Run without and with Saving and Investment
- 2.3. Difference between Real and Money Wage, Demand and Supply Curve of Labour and Labour Market Equilibrium
- 2.4. Classical Theory of Employment and Output- Complete Classical Model.
- 2.5. Neutrality of Money and Classical Dichotomy

Part-B

Unit-3: The Keynesian Theory of Income and Employment

- 3.1. Keynesian Aggregate Demand and Supply Curves using Consumption and Investment Curve (Graphically And Numerically)
- 3.2. Determination of Equilibrium Level of Output and Employment: Aggregate Demand-Supply Equilibrium and Saving and Investment Approach.
- 3.3. Keynesian Multiplier: Concept, Types of Multipliers in Case of Lumpsum and per unit Tax
- 3.4. Investment Multiplier, Government Expenditure Multiplier, Tax Multiplier, Leakages of Multiplier.

Unit 4: Macroeconomic Policy Challenges

- 4.1. Inflation Types: Demand-Pull and Cost-Push Inflation.
- 4.2. Unemployment Concepts: Types of Unemployment, Natural Rate
- 4.3. Monetary Policy and Inflation: Central Bank actions to Control Inflation/Deflation.
- 4.4. Fiscal Policy and Economic Stabilization: Using Government Spending and Taxation.

List of Suggested Textbooks/Reference Books:

- Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010.
- N. Gregory Mankiw, Macroeconomics, Worth Publishers, 7th edition, 2010.
- Richard T. Froyen, Macroeconomics, Pearson Education Asia, 2nd edition, 2005.
- N. Mankiw and D. Romer (1991), ed., New Keynesian Economics, MIT, 2 Volumes. Selected Readings.
- Paul R. Krugman, Maurice Obstfeld and Marc Melitz, International Economics, Pearson Education Asia, 9th edition, 2012.
- Blanchard Olivier: Macroeconomics, Pearson Education
- W. H. Branson. Macroeconomics, Harper & Row INC USA, Indian Edition
- D.N. Dwivedi, Macro Economics: Theory & Policy, Tata Mcgraw Hill

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

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- (ii) For Summative assessment (End Semester Examination or End-Term Examination):

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Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

.

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O4.5ECO201C01.1	3	2			2	3	3	3
O4.5ECO201C01.2	3	3		2		3		2
O4.5ECO201C01.3	3		3	2		3	2	2
O4.5ECO201C01.4	3	3	2	3	2	3	3	3

Manav Rachna International Institute of Research and Studies (MRIIRS)

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MATHEMATICAL ECONOMICS-I

COURSE CODE: O4.5ECO202C01

Periods/week Credits

L:3 T:1 P:0 4

Duration of examination: 3Hrs

Pre-requisites:

Course Type: Compulsory Courses

Maximum marks:100

Continuous Assessment: 30

End Semester Examination:70

Course Outcomes

After completion of this course, the students will be able to:

O4.5ECO202C01.1: Explain Economic Theories with the use of Matrix Algebra.

O4.5ECO202C01.2: Solve the Linear Equation System.

O4.5ECO202C01.3: Apply Mathematics for Economic Modelling.

O4.5ECO202C01.4: Use Calculus and Integral Calculus to Solve Economic Theories.

Part-A

Unit-1: Introduction to Matrix Algebra

- 1.1 Concept of Space, Scalar Versus Vector, Row/Column Vectors and their Operations
- 1.2 Different Types of Matrices: Square Matrix, Diagonal Matrix, Identity Matrix, Null Matrix, Scalar Matrix
- 1.3 Matrix Operations: Addition and Multiplication.

Unit-2: Solving Linear Equations

- 2.1. Linear Equations System in Matrix Notation and Role of the Inverse Matrix
- 2.2. Basics of Determinant and its Solution: Minor/Cofactor and Adjoint
- 2.3. Inverse of a Matrix and Solution of the Linear System including Cramer's Rule.

Part-B

Unit-3: Partial and Total Derivative

- 3.1. Techniques of Partial Differentiation
- 3.2. Second-Order Partial Derivative
- 3.3 Rules of Total Differential; Derivative of Implicit Function

Unit 4: Basics of Integral Calculus

- 4.1 Nature of Integral and Area Under the Curve
- 4.2 Integration by Parts; Definite Integral: Properties
- 4.3 Determination of Area; Indefinite and Improper

List of Suggested Textbooks/Reference Books:

- Chiang, A. C. (1984). Fundamental methods of mathematical economics. MacGraw-Hill. International (3rd Edition).
- Sydsaeter, K., & Hammond, P. J. (2008). Essential mathematics for economic analysis. Pearson Education.
- Allen, R. G. D. (1956). Mathematical analysis for economists.

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

(i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

(ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3
O4.5ECO202C 01.1	3	2	2		1			3	
O4.5ECO202C 01.2	3	2							
O4.5ECO202C 01.3	3	3	2	1		2		3	
O4.5ECO202C 01.4	3	2	2	1		2		2	

Manav Rachna International Institute Of Research And Studies (MRIIRS)
(Deemed to be University under Section 3 of the UGC Act 1956)
STATISTICAL METHODS IN ECONOMICS-II
COURSE CODE: O4.5ECO203C01

Periods/week Credits

L:3 T:1 P:0 4

Duration of examination: 3Hrs

Pre-requisites: Statistical Methods in Economics-I

Course Type: Compulsory Courses

Maximum marks: 100

Continuous Assessment:30

End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

O4.5ECO203C01.1: Apply Statistical Concepts, Techniques, and Methodologies to Real-World Data Sets

O4.5ECO203C01.2: Enhance Critical Thinking and Problem-Solving Abilities through the Application of Statistical Techniques

O4.5ECO203C01.3: Develop Effective Communication Skills, to Present Statistical Findings and Interpretations

O4.5ECO203C01.4: Development of a Curious and Analytical Mindset for Further Studies or Professional Applications in Fields Requiring Statistical Analysis

Part-A

Unit 1: Introduction to Statistics and Probability

- 1.1. Basic Concepts of Statistics: Populations, and Samples.
- 1.2. Introduction to Probability: Events, Outcomes, Sample Spaces.
- 1.3. Probability Rules: Addition Rule, Multiplication Rule, Complement Rule.
- 1.4. Conditional Probability and Bayes' Theorem.
- 1.5. Counting Principles: Permutations and Combinations.

Unit 2: Probability Distributions

- 2.1. Discrete Probability Distributions: Bernoulli, Binomial, and Poisson Distributions.
- 2.2. Continuous Probability Distributions: Uniform, Normal, Exponential, and Gamma Distributions.
- 2.3. Properties of Probability Distributions: Mean, Variance, and Moment Generating Functions.
- 2.4. Central Limit Theorem and its Significance.

Unit 3: Sampling and Estimation

- 3.1. Sampling Techniques: Random Sampling, Stratified Sampling, and Cluster Sampling.
- 3.2. Sampling Distributions: Sampling Distribution of Sample Means and Sample Proportion.
- 3.3. Point Estimation: Unbiasedness, Efficiency, and Consistency.
- 3.4. Confidence Intervals: Construction and Interpretation.
- 3.5. Sample Size Determination for Estimation.

Part-B

Unit 4: Hypothesis Testing

- 4.1. Introduction to Hypothesis Testing: Null and Alternative Hypotheses.
- 4.2. Test Statistics and P-Values.
- 4.3. Type I and Type II Errors, Significance Level, and Power of a Test.
- 4.4. One-Sample Tests for Means and Proportions.

- 4.5. Two-Sample Tests for Means and Proportions.
- 4.6. Goodness-Of-Fit Tests and Tests for Independence.

Unit 5: Analysis of Variance (ANOVA)

- 5.1. Introduction to ANOVA: One-Way And Two-Way ANOVA
- 5.2. ANOVA Assumptions: Normality, Equal Variances, And Independence.
- 5.3. One-way ANOVA: Sum of Squares, Mean Squares, F-Test, And Post-hoc Tests.
- 5.4. Two-way ANOVA: Main Effects and Interaction Effects.

List of Suggested Textbooks/Reference Books:

- Jay L. Devore (2012) *Probability and Statistics for Engineering and the Sciences*, 8th Edition, Cengage Learning
- David Anderson, Dennis Sweeney, Thomas Williams (2010) *Statistics for Business and Economics*, 11th Edition, Cengage Learning
- Goon A.M., Gupta M.K. and Dasgupta B. (2002): *Fundamentals of Statistics*, Vol. I & II, 8th Edn. The World Press, Kolkata
- Miller, Irwin and Miller, Marylees (2006): *John E. Freund’s Mathematical Statistics with Applications*, (7th Edn.), Pearson Education, Asia
- Spiegel, M.R., Schiller, J.J. and Srinivasan, R.A. (2013) *Probability and statistics*. New York: Schaum.
- Gupta, S.P. (2021) *Statistical Methods*. S. Chand and Sons
- Merchant, R. *et al.* (1998) *Applied Statistics for business and economics, third edition*, Allen L. Webster. Boston: Irwin/McGraw-Hill.

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Evaluation Policy:

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- (i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

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Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests
Surprise questions during lectures/Class Performance
Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O4.5ECO203C01.1	3		2	1		1	2	
O4.5ECO203C01.2	3	2	2	1	2	3	2	2
O4.5ECO203C01.3		3	2		2	3	2	2
O4.5ECO203C01.4	1		1		1	2	1	2

Manav Rachna International Institute Of Research And Studies (MRIIRS)

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GOVERNMENT AND POLITICS IN INDIA

COURSE CODE: O4.5ECO204E03

Periods/week Credits
L:2 T:1 P:0 3
Duration of examination: 3Hrs
Pre-requisites: NIL
Course Type: Elective Courses

Maximum marks:100
Continuous Assessment: 30
End Semester Examination:70

Course Outcomes

After completion of this course, the students will be able to:

- O4.5ECO204E03.1: Recognize the Role and Functioning Constitution of India
- O4.5ECO204E03.2: Explain the Indian Institutional System and Power Relation as per Constitution.
- O4.5ECO204E03.3: Describe the Structure and Functioning of Union and State Executives.
- O4.5ECO204E03.4: Explain a Systematic Analysis of Political Dimensions of Indian Political System.

Part-A

Unit-1: Indian Constitution

- 1.1. Basic Features of the Constitution and its Preamble.
- 1.2. Fundamental Rights, Fundamental Duties
- 1.3. Directive Principles of State Policy

Unit-2: Executive System

- 2.1. Formation of Union Parliament as well as State Legislature
- 2.2. Powers and Functions of President, Prime Minister and Council Of Ministers
- 2.3. Powers and Functions of State Governor, Chief Minister and Council of State Ministers

Part-B

Unit-3: Federalism and Decentralization

- 3.1. Structure of Decentralized Governments (Three-Tier System); Centre-State Relations
- 3.2. Provisions of Emergency in Centre-State Relations; Special Provisions for Selected States and the Fifth and Sixth
- 3.3. Third Tier of Government (Urban And Rural Local Bodies)

Unit 4: Laws and Rights

- 4.1. Judiciary System in India: Basic Structure, Supreme Court and High Court
- 4.2. Notion and Development of Human Rights: Laws and Institutions including United Nations and Human Rights
- 4.3. Act on Protecting Human Rights in India (NHRC And SHRC)

List of Suggested Textbooks/Reference Books:

- Austin, G. (2021). The Indian constitution: Cornerstone of a nation.
- Baxi, U. (2007). The future of human rights. Oxford University Press.
- Basu, D. D., Manohar, V. R., Banerjee, B. P., & Khan, S. A. (2015). Introduction to the Constitution of India (Vol. 163). Gurgaon: LexisNexis.

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

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Discussion/Presentation	15%
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(ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O4.5ECO204E03.1	2	1	2	1	2	1	2	3
O4.5ECO204E03.2	1	0	1	2	1	2	0	2
O4.5ECO204E03.3	0	2	1	2	2	0	1	2
O4.5ECO204E03.4	1	2	2	1	3	1	2	3

SEMESTER -III

Manav Rachna International Institute of Research and Studies (MRIIRS)

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INTERMEDIATE MICROECONOMICS

COURSE CODE: O5.0ECO101C01

Periods/week	Credits	Maximum marks: 100
L:3 T:1 P:0	4	Continuous Assessment: 30
Duration of examination: 3Hrs		End Semester Examination: 70
Pre-requisites: Introductory Microeconomics		
Course Type: Compulsory Courses		

Course Outcomes

After completion of this course, the students will be able to:

O5.0ECO101C01.1: Interpret of Market Forces in Detail

O5.0ECO101C01.2: Understand Consumer Choice and Demand

O5.0ECO101C01.3: Mastering Producer Equilibrium in Perfect Competition Market

O5.0ECO101C01.4: Understand the Impact of Monopolies versus Competitive Equilibrium on Economic Outcomes

Part-A

Unit-1: The Market Forces of Demand and Supply

- 1.1. Demand: - Individual Demand, Market demand, Factors affecting Individual/Market Demand, Law of Demand, Change in Demand and Change in Quantity demanded
- 1.2. Supply: - Individual Supply, Market Supply, Factors affecting Individual/Market Supply, Law of Supply, Change in Supply and Change in Quantity Supplied
- 1.3. Elasticity of Demand and Elasticity of Supply: - Degrees of Elasticity, Types of Elasticity, Factors affecting Elasticity
- 1.4. Application of Supply, Demand and Elasticity

Unit-2: Consumer Optimization

- 2.1. Marginal Utility and Consumer Equilibrium: Optimal Consumption Bundles, Income and Substitution Effects
- 2.2. Consumer Surplus and Deadweight Loss: Definition and Calculation of Consumer Surplus, Impact of Price Changes on Consumer Surplus
- 2.3. Deadweight Loss and Market Inefficiency

Part-B

Unit-3: Producer's Equilibrium: Perfect Competition

- 3.1. Total, Average and Marginal Revenues in Competitive and Imperfectly Competitive Markets
- 3.2. Relation Between Average and Marginal Revenues (with Mathematical Proof).
- 3.3. Producer's Equilibrium: Meaning and its Conditions in Terms of Marginal Revenue and Marginal Cost.
- 3.4. Producer's Equilibrium: Meaning and its Conditions in Terms of Total Revenue and Total Cost.

Unit 4: Producer's Equilibrium: - Monopoly

- 4.1. Emergence of Monopoly Market including Natural Monopoly; Price or Output Decision Under Monopoly: Short Run versus Long Run; Possibility of Excess Profit or Loss Under Monopoly: Short Run versus Long Run

- 4.2. Multi-Plant Monopoly; Mathematical Derivation of Monopoly Equilibrium: Single and Multi-Plant Cases; Deadweight Loss under Monopoly
- 4.3. Monopoly Price Discrimination: First, Second and Third Degrees; Degree Of Monopoly Power; Impact of Lump-Sum and Unit Taxes on Monopolist.

List of Suggested Textbooks/Reference Books:

- Mankiw, N.G. (2015) Principles of microeconomics. Stanford, CT: Cengage Learning.
- Varian, H.R. (2020) Intermediate microeconomics: A modern approach. New York: W.W. Norton and Company.
- Pindyck, R.S. and Rubinfeld, D.L. (2005) Microeconomics. Upper Saddle River, NJ: Pearson Prentice Hall.
- Frank, R.H. (2020) Microeconomics and behaviour. New York, NY: McGraw-Hill Education.

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

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Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO101C01 .1	3	2	1	2	1	3	3	1
O5.0ECO101C01 .2	3	2	1	2	2	3	2	1
O5.0ECO101C01 .3	3	2	1	2	1	3	2	1
O5.0ECO101C01 .4	3	2	1	2	1	3	3	1

Manav Rachna International Institute of Research and Studies (MRIIRS)

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INTERMEDIATE MACROECONOMICS

COURSE CODE: O5.0ECO102C01

Periods/week Credits

L:3 T:1 P:0 4

Duration of examination: 3Hrs

Pre-requisites: Introduction to Macroeconomics

Course Type: Compulsory Courses

Maximum marks: 100

Continuous Assessment: 30

End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

O5.0 ECO102C01.1: Explain Classical and Keynesian Approaches to Understand Key Macroeconomic Issues.

O5.0 ECO102C01.2: Examine the Various Concepts of IS-LM Model.

O5.0 ECO102C01.3: Analyse the Interdependence of Real and Monetary Sectors of the Economy

O5.0 ECO102C01.4: Relate the Main Macroeconomic Models used to Study the Real World Business Cycles

Part-A

Unit-1: Keynesian versus Classical Models

- 1.1. Mathematical Formulation of Classical and Keynesian Models and their Graphical Representation.
- 1.2. Comparison between Classical and Keynesian Models.
- 1.3. Wage-Price Rigidity/Flexibility: Menu Cost, Shoe Leather Cost, Insider Outsider Model, Coordination Failure.

Unit-2: IS-LM Models

- 2.1. Product Market Equilibrium: Derivation of IS Curve including its Slope (Mathematical Derivation) and Possible Shifts.
- 2.2. Money Market Equilibrium: Derivation of LM Curve including its Slope (Mathematical Derivation) and Possible Shifts
- 2.3. IS-LM Equilibrium and its Stability; Liquidity Trap, Underemployment Equilibrium.

Part-B

Unit-3: Money and Inflation

- 3.1. Quantity Theories of Money Supply: Fisher versus Cambridge Versions
- 3.2. Liquidity Preference: Transactional and Speculative/Precautionary Demand
- 3.3. Inflation and Interest Rates; Fischer Effect, Ex-Ante/Ex-Post Real Interest Rates
- 3.4. Social Costs of Inflation: Layman's View and Classical Response, Costs of Expected/Unexpected Inflation, Benefits of Inflation.
- 3.5. Short Run Phillips Curve

Unit 4: Business Cycles

- 4.1. Overview and Concepts of Business Cycles
- 4.2. Theories of Business Cycle: Samuelson's Theory, Hicks' Theory, Kaldor's Theory, Real Business Cycle Theory.
- 4.3. Understanding Business Cycles with Help of Case Study (US Financial Crisis 2010 , Euro Zone Crisis).

List of Suggested Textbooks/Reference Books:

- Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010.
 - N. Gregory Mankiw, Macroeconomics, Worth Publishers, 7th edition, 2010.
 - Richard T. Froyen, Macroeconomics, Pearson Education Asia, 2nd edition, 2005.
 - N. Mankiw and D. Romer (1991), ed., New Keynesian Economics, MIT, 2 Volumes. Selected Readings.
 - Paul R. Krugman, Maurice Obstfeld and Marc Melitz, International Economics, Pearson Education Asia, 9th edition, 2012.
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- Blanchard Olivier: Macroeconomics, Pearson Education
 - W. H. Branson. Macroeconomics, Harper & Row INC USA, Indian Edition
 - D.N. Dwivedi, Macro Economics: Theory & Policy, Tata Mcgraw Hill

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Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO102C01. 1	3		2			3	2	2
O5.0ECO102C01. 2	3		2	3	2	3	2	3
O5.0ECO102C01. 3	3	3			3	3		3
O5.0ECO102C01. 4	3	3		3	3	3		3

Manav Rachna International Institute of Research and Studies (MRIIRS)
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MATHEMATICAL ECONOMICS- II
COURSE CODE: O5.0ECO103C01

Periods/week	Credits	Maximum marks: 100
L:3 T:1 P:0	4	Continuous Assessment: 30
Duration of examination: 3Hrs		End Semester Examination:70
Pre-requisites: Mathematical Economics- I		
Course Type: Compulsory Courses		

Course Outcomes

After completion of this course, the students will be able to:

O5.0ECO103C01.1: Familiarizing with The Role of Mathematics in Solving Economic Problems.

O5.0ECO103C01.2: Analyse Optimization Problem and its Economic Applications.

O5.0ECO103C01.3: Illustrate The Linear Programming Modelling.

O5.0ECO103C01.4: Solve The Input-Output Problem.

Part-A

Unit-1: Introduction to Optimization Problem

- 1.1. Overview: Optimization Problem and Extreme Values, Local Versus Global Optima
- 1.2. Bivariate Function: Convex/Concave, Maxima/Minima, and Inflection Point, First-Derivative Test and Second-Derivative Test
- 1.3. Multivariable Function: Maxima/Minima and Saddle Point (Including Numerical Examples for Hessian Matrix)

Unit-2: Economic Applications of Optimization

- 2.1. Constrained Optimization: Lagrangian Function and its Second-Order Test of Bordered Hessian
- 2.2. Proof of Utility Maximization with Budget Constraints
- 2.3. Introduction to Comparative Static in Economics, Simple Chain Rule

Part-B

Unit-3: Linear Programming

- 3.1. Formulation of LPP and its Graphical Solution
- 3.2. Simple's method to find extreme value
- 3.3. Overview of duality in LPP

Unit 4: Input-Output Model

- 4.1. Structure of Leontief Input-Output Model
- 4.2. Static Input-Output Analysis: Open and Closed Model
- 4.3. Hawkins-Simon Condition

List of Suggested Textbooks/Reference Books:

- Chiang, A. C. (1984). Fundamental methods of mathematical economics. MacGraw-Hill. International (3rd Edition).
- Sydsæter, K., & Hammond, P. J. (2008). Essential mathematics for economic analysis. Pearson Education.
- Allen, R. G. D. (1956). Mathematical analysis for economists.
- Rosser, M. (2003). Basic mathematics for economists. Routledge.

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Objective Type Questions: 30%
Short/Long Questions: 70%

Assessment Tools:

Assignment/Tutorials
Sessional tests
Surprise questions during lectures/Class Performance
Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO103C0 1.1	1	1	2	2	3		1	
O5.0ECO103C0 1.2	1	1	2	2	3		1	
O5.0ECO103C0 1.3	0	1	3	3	1		2	1
O5.0ECO103C0 1.4	0	1	3	3	1		2	1

Manav Rachna International Institute of Research and Studies (MRIIRS)
(Deemed to be University under Section 3 of the UGC Act 1956)
DATA ANALYSIS AND VISUALIZATION USING EXCEL AND SPSS
COURSE CODE: O5.0ECO151C04

Periods/week Credits
L:0 T:0 P:4 2
Duration of examination: 2Hrs
Pre-requisites: NIL
Course Type: Compulsory Courses

Maximum marks:100
Continuous Assessment: 30
End Semester Examination:70

Course Outcomes

After completion of this course, the students will be able to:

- O5.0ECO151C04.1: Understand the basics of Excel.
- O5.0ECO151C04.2: Analyse and visualize data using Excel.
- O5.0ECO151C04.3: Use SPSS for data handling.
- O5.0ECO151C04.4: Analyse data using SPSS.

Part-A

Unit 1: Excel Essentials

- 1.1. Excel Interface and Navigation: Ribbons, Tabs, Cells, Rows, Columns, Worksheets and Workbooks
- 1.2. Data Entry and Formatting
- 1.3. Basic Functions and Formulas: Sum, Average, Count with if Condition
- 1.4. Data Accuracy and Protection: Validation Rules, Password Locking, and Sheet Protection

Unit 2: Data Analysis and Visualization in Excel

- 2.1. Sorting and filtering data including advanced filters; Conditional formatting
- 2.2. Pivot tables and pivot charts
- 2.3. Advanced functions and formulas: VLOOKUP, HLOOKUP, INDEX-MATCH and CONCATENATE
- 2.4. Data cleaning and transformation: removing duplicates, handling missing data, text-to-column transformations

Part-B

Unit 3: SPSS Fundamentals

- 3.1. Overview of SPSS and Data Management: Data Editor, Import/Open Data Files, Saving Data Files, Splitting Data Files
- 3.2. Merging Data from Separate Files, Data Transformations: Recoding Variables, Computing New Variables
- 3.3. Creating Graphs, Managing Output: Editing Output, Saving/Copying Output

Unit 4: Data Analysis Using SPSS

- 4.1. Data Analysis: Frequencies, Descriptive Statistics, Crosstab, and Correlation
- 4.2. Regression: Simple and Multivariate with Model Interpretation
- 4.3. Factor Analysis with a Theoretical Overview

List of Suggested Textbooks/Reference Books:

- Etheridge, D. (2011). Excel Data Analysis: Your visual blueprint for creating and analyzing data, charts and PivotTables. John Wiley and Sons.
- Alexander, M., Kusleika, D., & Walkenbach, J. (2019). Microsoft Excel 2019 Bible. John Wiley & Sons, Incorporated.
- Carver, R. H., & Nash, J. G. (2011). Doing data analysis with SPSS: version 18.0. Duxbury Press.

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

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Discussion/Presentation	15%
Projects/Group Activities etc	15%

(ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

There will be three components: Written exam (20%), Practical (60%), and Viva (20%).

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO151C04.1	3		3		2	3	3	3
O5.0ECO151C04.2	3			2		3		2
O5.0ECO151C04.3	3	3	2	2		3		2
O5.0ECO151C04.4	3	2	2	3	2	3	3	3

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UNIVERSAL HUMAN VALUES
COURSE CODE: O5.0SBSS100C04

Periods/week Credits
L:1 T:1 P:0 2
Duration of examination:2Hrs
Pre-requisites: NIL
Course Type: Compulsory Courses

Maximum marks: 100
Continuous Assessment: 30
End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

- O5.0SBSS100C04.1: Understand the usefulness of values inputs in personal and professional lives.
- O5.0SBSS100C04.2: Acknowledge the importance of having harmonious relationships built on mutual respect and trust in both personal and professional lives.
- O5.0SBSS100C04.3: Understand how humans contribute to maintaining peace in both the environment and society.
- O5.0SBSS100C04.4: Explore ways to integrate human values in happiness and material achievements.
- O5.0SBSS100C04.5: Help to tackle various day-to-day situations in real life, or at least take a step in that direction

Module 1: Understanding Human Values

- 1.1. Characteristics of Universal Human Values
- 1.2. Difference between value-based education and skill-based education.
- 1.3. Content of value education
- 1.4. Self-Exploration– Meaning and Process
- 1.5. Basic Human Aspirations – Meaning and Basic Requirements for fulfilling.
- 1.6. Measures to fulfil basic human aspirations in the current scenario.

Module 2: Understanding Harmony: Self and other people

- 2.1. Recognising the human person as a coexistence of the material ‘Body’ and the conscious ‘I’
- 2.2. Understanding the requirements of one’s body and oneself or *Sukh* and *Suvidha*
- 2.3. Recognising the body as a tool of ‘I’ (the performer, observer, and admirer)
- 2.4. Recognising the traits and pursuits of ‘I’ and harmony within ‘I’ realising the balance between the body and the self—*Sanyam and Swasthya*—as well as the proper evaluation of one's physical demands, the precise definition of prosperity, and programmes that uphold *Sanyam and Swasthya*.

Module 3: Human-Human Relationships and in Families and Society

- 3.1. Understanding harmony in the Family- the basic unit of human interaction.
- 3.2. Understanding values in human-human relationship: ‘Respect’ is the proper attitude, and ‘trust’ is the fundamental value.
- 3.3. Justice, trust (*Vishwas*) and Respect (*Samman*) as the foundational values of relationship in human-to-human relationships.
- 3.4. Understanding social harmony (because society is a family): *Samadhan, Samridhi, Abhay, and Sah-astitva* as all-encompassing human goals.
- 3.5. Envisioning an unbroken, peaceful society (Akhand Samadhi), a universal order (Sarvabhaum Vyawastha), and moving from the family to the global family!

Module 4: Harmony in nature and existence—the coexistence of all things

- 4.1. Understanding the harmony in the Nature
- 4.2. Understanding Existence as Co-existence (*Sah-astitva*) of mutually interacting units in all-pervasive space
- 4.3. Holistic perception of harmony at all levels of existence

Module 5: Implications of Harmony on Professional Ethics

- 5.1. The universal order of humanism, the constitution, the universal order, the basis for education and the acceptance of human values

List of Suggested Textbooks/Reference Books:

- Gaur, R R, Asthana, R and Bagaria G P (2019), A Foundation Course in Human Values and Professional Ethic, Excel Books; New Delhi.
- Gaur, R R, Asthana, R and Bagaria G P (2019), The Teacher's Manual for A Foundation Course in Human Values and Professional Ethics, Excel Books; New Delhi.
- Nagaraj, A (1999), Jeevan Vidya: Ek Parichaya, Jeevan Vidya Prakashan: Amar kantik.
- Tripathi, A, N (2004), Human Values, New Age International Publishers: New Delhi.
- Donella H. Meadows, Dennis L. Meadows (eds.) 1972, Limits to Growth – Club of Rome's report, Universe Books.
- P L Dhar, RR Gaur (1990), Science and Humanism, Commonwealth Publishers: New Delhi.
- E G Seebauer & Robert L. Berry (2000), Fundamentals of Ethics for Scientists & Engineers, Oxford University Press: London.
- Banerjee, B. P(2005), Foundations of Ethics and Management, Excel Books: New Delhi.
- Bajpai, B L(2004), Indian Ethos and Modern Management, New Royal Book Company :Lucknow.

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

- (i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

- (ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0SBSS100C04.1	3			3		3	3	3
O5.0SBSS100C04.2	2		3	3	2	2	3	2
O5.0SBSS100C04.3	3	3		2	2	2	2	3
O5.0SBSS100C04.4	3	3	2	3	3	3		3
O5.0SBSS100C04.5	3	2	3				2	

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INTERNSHIP

COURSE CODE: O5.0ECO152C06

Periods/week Credits

Maximum marks: 100

L:0 T:0 P:4 2

Duration of examination:2Hrs

End Semester Examination: 100

Pre-requisites: NIL

Course Type: Compulsory Courses

Course Outcomes

After completion of this course, the students will be able to:

O5.0ECO152C06.1: Identify the Scope of Career Opportunity in the Field and Prepare for a Career in Economics

O5.0ECO152C06.2: Gain Experience on Economic Analysis and Methods by Means of Pre-Professional Experience

O5.0ECO152C06.3: Demonstrate their Domain Knowledge to Apply in the Organization while involved as Intern

O5.0ECO152C06.4: Critically Evaluate the Use of Economic Analysis in Practice by Involving With An Organization

The objective of internship program is to give students real-world experience at a workplace where they can use their domain knowledge. The internship provides a learning experience and it is expected that the interns will receive mentoring on-the-job. Students will be responsible for researching opportunities and attaining their own internship position.

A completed and signed Internship Agreement must be submitted in advance, and must include the employer's job description documenting the proposed internship experience and how that experience will contribute to the learning outcomes. There will be a faculty member to be assigned for monitoring the student during internship programme, and the student must inform his/her progress to concerned faculty member at Department. The purpose of this assessment is to provide the student intern with constructive feedback on his/her internship experience.

Course Requirements:

Students must be involved in the internship equivalent to 'Eight hours/week for the duration of Eight weeks'. Students should undergo the internship during the summer vacation (i.e., at the end of the first year). Students should do the internship relevant to the economic discipline either under public or private institutions, which allows them to explore contemporary issues and challenges, data collection and literature review by assisting the institutions.

Every week, one practical classes shall be held at the department with an assigned mentor, and the rest of the practical tasks will be treated as internship training. After completing the internship, the students must write a final reflection report about the internship experience. The report should include a self-evaluation of what they gained through the experience, what challenges they faced and identify experiences or coursework that helped them prepare for the duties performed in this position. Describe the internship experience using economic reasoning and methods by the organization and critically evaluate their effectiveness and limitations.

Report should be a minimum of ten single-spaced printed pages with font Times New Roman size 12.

Continuous assessment

- Feedback by external supervisor of internship organization: 15 Marks (30%)
- Feedback by internal mentor assigned by the Department: 15 marks (30%)
- Feedback by external during Viva and Presentation: 20 Marks (40%)

Internship report presentation (50%) and viva (50%)

This evaluation form should be completed by the internship site supervisor or the individual who is most responsible for supervising the intern's work assignments. The student's grade is partially based on both external and internal evaluations of performance on each of the internship dimensions identified below. Use the evaluation rubric to assess

the student's performance on each dimension by specifying a score based on the performance ratings against each criteria mentioned in the rubric form.

- **Internal Evaluation (30 Marks)**

Evaluation Dimensions	Needs Improvement		Meets Expectations		Performed Very Well	Score
	(Very Poor) 1	(Poor) 2	(Good) 3	(Very Good) 4	(Excellent) 5	
Evaluation by Internal Mentor (15 Marks)						
Timely Registration	Late Registration after regular reminder		On time registration		Before/timely registration and submitted acceptance letter from company/NGO	/05
Quality of Work	Work was careless and inconsistent; assignments were late and needed revision; Submitted reflective report very late.		With a few minor mistakes, completed most work assignments on schedule and submitted report on time.		Thoroughly and accurately performed all work Requirements of the company; submitted all work assignments on time. Timely Submission of report.	/05
Maintaining weekly activity log book and regular discussion with the Supervisor	Was absent excessively and/or was almost late/Communication gap between student and supervisor. Not able to maintain the weekly diary.		Usually reported to work as scheduled and was almost on-time/regular discussion with the supervisor. Maintained the activity diary with few/minor exceptions.		Always reported to work as scheduled with no absences and was always on time/ frequent discussions with the supervisor. Regularly maintained a diary about his/her learning in the company.	/5
Total						/15
Evaluation by the Supervisor of Internship Company/Organisation (15 Marks)						
Completion of Hours	Unable to complete/very hardly completed the required hours of work assigned by Company		Almost completed/completed the required hours of work assigned by company		More than/accurately completed of required hours of work assigned by the company	/10

Level of work engagement and learning in the company	required close supervision and showed little interest in meeting standards; did not seek out additional work and frequently procrastinated in completing assignments; suggested no new ideas or options	Worked without extensive supervision; in some cases, found problems to solve and sometimes asked for additional work assignments; normally set his/her own goals and offered some creative ideas. Showed interest to learn new skills.	Was a self-starter; consistently sought new challenges and asked for additional work assignments; regularly approached and solved problems independently; frequently proposed innovative and creative ideas. Ambitious and enthusiastic about learning new skills.	/5
Total				/15
Total Internal Evaluation Marks				/30

- External Evaluation (20 Marks)

Evaluation Dimensions	Needs Improvement		Meets Expectations		Excellent	Score
	(Very Poor) 1	(Poor) 2	(Good) 3	(Very Good) 4	5	
Level of Understanding	The student is not able to understand the topic and its practical implications.		The student has shown his/her skill to understand the topic and its practical implications		The student has a thorough understanding of his/her work and its relevance and applicability.	/5
Relevance of Internship	Not able to learn all necessary skills to apply in the economics domain area		Trying to learn all necessary skills to apply in the economics domain area.		Learnt all necessary skills, tools and methods which can be helpful in applying in the economics domain area	/5
Quality of Report	The report is poorly written in terms of clarity, grammar, punctuation and plagiarism.		The report is well written.		The report is well-organised, clear and without plagiarism.	/5
Presentation and Viva	Poor presentation and unable to answer the questions asked during Viva.		Good presentation and answered most of the queries.		Well-designed Slides and Fluent Presentation. Well Addressed the questions of the external examiner.	/5

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO152C06 .1	3		3		2	3	3	3
O5.0ECO152C06 .2	3			2		3		2
O5.0ECO152C06 .3	3	3	2	2		3		2
O5.0ECO152C06 .4	3	2	2	3	2	3	3	3

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FIELD VISIT

COURSE CODE: O5.0ECO153C06

Periods/week Credits

L:0 T:0 P:4 2

Duration of examination: 2Hrs

Pre-requisites: NIL

Course Type: Compulsory Courses

Maximum marks:100

Continuous Assessment: 30

End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

5.0ECO153C06.1: Understand the Dynamics of Field

5.0ECO153C06.2: Understand Working of NGO's at Grassroots

5.0ECO153C06.3: Connecting Domain Knowledge with the Field while Involved as an Intern

5.0ECO153C06.4: Critically Evaluate the Policies and Practices by Involving with an Organisation

The objective of the Field Visit course is to give students real-world experience at a workplace where they can use their domain knowledge. Students can look for local NGOs and are required to undertake 'four hours/week for the duration of Eight weeks'. Every week, one theory classes shall be held at the department with an assigned mentor, and the rest of the practical tasks will be guided by NGO chosen by the student. There will be a faculty member assigned to monitor the student during the Field Survey program, and the student must inform his/her progress to concerned faculty member in the Department. A completed and signed Field Survey Agreement must be submitted in advance which clearly shows the role and responsibility.

Course Requirements

Students can engage in various social activities in connection with local NGOs and contribute to their activities related to the underprivileged section of society in nearby campus. Students can take up any issues like Gender sensitization, Child Issues, Education, Health, Environmental protection, Social Issues, Elderly issues or any other according to relevance and interest of the student. Students can also volunteer to conduct camps and workshops in villages around campus with the help of local NGOs and help them in making interventions in the community.

After completing the Field Survey, the students must write a final reflection report about the Field Survey experience. The report should include a self-evaluation of what they gained through the experience, what challenges they faced and identify experiences or coursework that helped them prepare for the duties performed in this position. Apart from this, students can describe their Field Survey experience using economic reasoning and critically evaluate the policies and their effectiveness and limitations.

Evaluation Tools:

Continuous assessment

- Feedback by external supervisor of internship organization: 15 Marks (30%)
- Feedback by internal mentor assigned by the Department: 15 marks (30%)
- Feedback by external during Viva and Presentation: 20 Marks (40%)

End semester paper setting instructions:

Field Visit report presentation (50%) and viva (50%)

Assessment Tools

This evaluation form should be completed by the NGO/organisation supervisor or the individual who is most responsible for supervising the students work assignments. The student's grade is partially based on both external and internal evaluations of performance on each of the dimensions identified below. Use the evaluation rubric to assess the student's performance on each dimension by specifying a score based on the performance ratings against each criteria mentioned in the rubric form.

- **Internal Evaluation (30 Marks)**

Evaluation Dimensions	Needs Improvement		Meets Expectations		Performed Very Well	Score
	(Very Poor) 1	(Poor) 2	(Good) 3	(Very Good) 4	(Excellent) 5	
Evaluation by Internal Mentor (15 Marks)						
Timely Registration	Late Registration after the regular reminder		On-time registration		Before/timely registration and submitted acceptance letter from company/NGO	/05
Quality of Work	Work was careless and inconsistent; assignments were late and needed revision; Submitted reflective report very late.		With a few minor mistakes, completed most work assignments on schedule and submitted reports on time.		Thoroughly and accurately performed all work Requirements of the company; submitted all work assignments on time. Timely Submission of report.	/05
Maintaining weekly activity log book and regular discussion with the Supervisor	Was absent excessively and/or was almost late/Communication gap between student and supervisor. Not able to maintain the weekly diary.		Usually reported to work as scheduled and was almost on-time/ regular discussion with supervisor. Maintained the activity diary with few/minor exceptions.		Always reported to work as scheduled with no absences and was always on time/ frequent discussions with the supervisor. Regularly maintained a diary about his/her learning in the company.	/5
Total						/15
Evaluation by the Supervisor of NGO/Organisation (15 Marks)						
Completion of Hours	Unable to complete/ very hardly completed the required hours of work assigned by the organisation.		Almost completed/completed the required hours of work assigned by the organisation.		More than/accurately completed of required hours of work assigned by the organisation.	/10
Level of work engagement and learning in the company	Required close supervision and showed little interest in engaging with the community; frequently procrastinated to meet the community.		Explored communities and trying to understand their context and policy relevance to them. Engaged in community welfare programs.		Ambitious and enthusiastic about exploring communities with empathy and keen to understand their context and policy relevance to them. Actively engaged in community welfare programs	/5
Total						/15
Total Internal Evaluation Marks						/30

• External Evaluation (20 Marks)

Evaluation Dimensions	Needs Improvement		Meets Expectations		Excellent	Score
	(Very Poor) 1	(Poor) 2	(Good) 3	(Very Good) 4	5	
Level of Understanding	The student is not able to understand the topic and its practical implications.		The student has shown his/her skill to understand the topic and its practical implications		The student has a thorough understanding of his/her work and its relevance and applicability.	/5
Relevance of Field Visit	Not able to explore socio economic issues of the community and different policies implications. No case study was done.		Trying to explore socio economic issues of the community and different policies implications and provided case study.		Explored socio economic issues of the community and different policy implications and came up with an interesting case study	/5
Quality of Report	The reflective report is poorly written in terms of clarity, grammar, punctuation and plagiarism.		The reflective report is well written.		The reflective report is well-organised, clear and without plagiarism.	/5
Presentation and Viva	Poor presentation and unable to answer the questions asked during Viva.		Good presentation and answered most of the queries.		Well-designed Slides and Fluent Presentation. Well Addressed the questions of the external examiner.	/5
Total External Evaluation Marks						/20

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
05.0ECO153C06.1	3	3				3	2	1
05.0ECO153C06.2	3	3			2	3	2	1
05.0ECO153C06.3	2	2		1	2	3	2	2
05.0ECO153C06.4	2	3			2	3	2	2

Manav Rachna International Institute of Research and Studies (MRIIRS)
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AGRICULTURAL ECONOMICS
COURSE CODE: O5.0ECO104E02

Periods/week Credits
L:2 T:1 P:0 3
Duration of examination: 3Hrs
Pre-requisites: NIL
Course Type: Elective Courses

Maximum marks: 100
Continuous Assessment: 30
End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

- O5.0ECO104E02.1: Develop a Comprehensive Understanding of Agricultural Economics and its Importance in the Indian Economy.
- O5.0ECO104E02.2: Explore the Role of Different Factors like Inputs/Price/Finance/Marketing in Agricultural Development.
- O5.0ECO104E02.3: Understand the Importance of Finance and Marketing in Agriculture.
- O5.0ECO104E02.4: Analyse Policies for Various Facets of Sustainable Agricultural Development and Planning.

Part-A

Unit-1: Introduction to Agricultural Economics

- 1.1. Agricultural Economics: Nature and Scope; Importance of Agriculture in National Income, Employment, Industrial Development and International Trade Over Time.
- 1.2. Green Revolution and Trends in Agricultural Economy, India's Position in World Agriculture.
- 1.3. Demand And Supply in Agricultural Markets: Factors Affecting Them, Equilibrium Price Determination

Unit-2: Agricultural Production, Labour and Prices

- 2.1. Agriculture Production: Changes and Pattern, Farm Size Versus Productivity.
- 2.2. Agricultural Inputs and Process of Cost Estimation.
- 2.3. Agricultural Price: Trends and Reasons For Price Fluctuations, Price Stabilization and Price-Support Policies.

Part-B

Unit-3 Agricultural Finance and Marketing

- 3.1. Agriculture finance: role and importance, credit constraints, challenges in institutional financing.
- 3.2. Role of NABARD, RRBs, MFIs, Cooperatives, FPOs and SHGs in rural agricultural finance.
- 3.3. Role of information technology and telecommunication in marketing of agricultural commodities: electronic auctions (e-bay), e-Chaupals, Agmarknet in India.

Unit 4: Agricultural Policy and Planning

- 4.1. Policy on agriculture and food security, sustainable agricultural development.
- 4.2. Climate change impact on agriculture and way ahead with Climate smart agriculture.
- 4.3. Impact of trade policies on agricultural exports and imports, Agriculture trade and WTO.

List of Suggested Textbooks/Reference Books:

- A Barkley & P W Barkley: Principles of agricultural economics, Routledge
- A J Rayner & D Colman: Current issues in agricultural economics, Macmillan
- B L Gardner & G C Rauser: Handbook of Agricultural Economics (different volumes), Elsevier
- S S Acharya & N L Agrawal: Agriculture Marketing in India, Oxford IBH Publishing
- Agricultural Statistics in India: Directorate of Economics and Statistics, Ministry of Agriculture, Government of India

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

(i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

(ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO104E02.1	3			3		3	3	3
O5.0ECO104E02.2	2			3			3	2
O5.0ECO104E02.3	3	3		2			2	3
O5.0ECO104E02.4	3	3	2	3	3	3		3

Manav Rachna International Institute Of Research And Studies (MRIIRS)
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FINANCIAL ACCOUNTING IN INDIA
COURSE CODE: O5.0ECO105E03

Periods/week Credits
L:2 T:1 P:0 3
Duration of examination: 3Hrs
Pre-requisites: NIL
Course Type: Elective Course

Maximum marks:100
Continuous Assessment:30
End Semester Examination:70

Course Outcomes

After completion of this course, the students will be able to:

- O5.0ECO105E03.1: Understand Needs and Characteristics of Accounting in India.
- O5.0ECO105E03.2: Understand Some Basics of Accounting.
- O5.0ECO105E03.3: Understand Business Implications of Financial Statement Information
- O5.0ECO105E03.4: Understand Preparation of Final Accounts

Part-A

Unit-1: Framework of Accounting System

- 1.1. Accounting as Information System, Need for Financial Accounting, Qualitative Characteristics of Accounting.
- 1.2. Double Entry Bookkeeping System: Basic Accounting Equation, Meaning of Assets, Liabilities, Equity, Revenue and Expenses

Unit-2: Standard of Financial Accounting

- 2.1. Basis of Accounting: Cash Basis and Accrual Basis; Nature of Accounting Principles: Basic Concepts And Conventions on Entity, Money Measurement, Going Concern, Cost, Realization, Accruals, Periodicity, Consistency, Prudence, Materiality and Full Disclosures.
- 2.2. Standards of Financial Accounting: Concept, Benefits, Procedure in India

Part-B

Unit-3: Business Income

- 3.1. Measurement of Business Income: Accounting Period, Continuity Doctrine, Matching Concept and Objectives of Measurement; Revenue: Recognition Principles and Recognition of Expenses.
- 3.2. Depreciation: Nature and Accounting Concept, Factors in Measurement, Methods of Computing (Straight Line and Diminishing Balance), Disposal of Assets

Unit-4: Preparation of Final Accounts

- 4.1. Provisions and Reserves Including their Interrelationship
- 4.2. Trading Account, Profit-Loss Accounts and Balance Sheet including Adjustment

List of Suggested Text Books/Reference Books

- R N Anthony and J S Reece: Accounting Principles, Richard Irwin
- R L Gupta and M Radhaswamy: Financial Accounting, Sultan Chand and Sons
- J R Monga, G Ahuja and A Sehgal: Financial Accounting, Mayur Paper Back
- C Shukla, T S Grewal, and S C Gupta: Advanced Accounts, Sultan Chand and Sons

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

(i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

(ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

labus and all the COs (up to BTL 3). There will be no choice in question 1. In Part B (question number 2 to 5), there can be an internal choice between each of the questions covering the same (set) of COs and BTL. All COs will be covered in Part B

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO105E03. 1	3	2			2	2	2	2
O5.0ECO105E03. 2	2		2	2		2		
O5.0ECO105E03. 3	2	2				2	2	
O5.0ECO105E03. 4	2		2		2	2		2

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INDIAN ECONOMY-I
COURSE CODE: O5.0ECO106E03

Periods/week Credits
L:2 T:1 P:0 3
Duration of examination: 3Hrs
Pre-requisites: NIL
Course Type: Elective Courses

Maximum marks:100
Continuous Assessment: 30
End Semester Examination:70

Course Outcomes

After completion of this course, the students will be able to:

O5.0ECO106E03 1: Understand the Indian Economy Before and After Independence

O5.0ECO106E03 2: Comprehend with Various Policies and their Implications.

O5.0ECO106E03 3: Develop a Comprehensive Understanding of Various Economic Issues

O5.0ECO106E03 4: Illustrate the Role and Relevance of the Haryana Economy and its Contribution to the Nation.

Part-A

Unit-1: State of Indian Economy Before and After Independence

- 1.1. Colonialism, Economic Systems, State of Primary, Secondary and Tertiary Sector
- 1.2. Role of Handicrafts and Small Scale Industries
- 1.3. Objectives, Achievements and Failures Of Planning
- 1.4. Economic Crisis During the Late 1990s.
- 1.5. Reforms Undertaken In 1990

Unit-2: Economic Reforms in India

- 2.1. Banking Sector Reforms
- 2.2. Reforms in Tax Policy
- 2.3. Reforms in The External Sector
- 2.4. Reforms in Labour Market

Part-B

Unit-3: Population Growth and Distribution

- 3.1. Demographic Trends and Issues
- 3.2. Trends in GDP and per capita GDP
- 3.3. Growth, Poverty and Inequality
- 3.4. Youth Unemployment

Unit-4: Haryana Economy

- 4.1. Partition of Punjab & Haryana
- 4.2. Government Structure in Haryana at State and Local Level
- 4.3. Contribution of Haryana to the Nation's Development
- 4.4. Self-Sufficiency in Haryana and its Export-Import Contribution

List of Suggested Textbooks/Reference Books:

- Kapila, U. (Ed.). (2008). Indian Economy since independence. Academic Foundation.
- Datt, R., & Sundaram, K. P. M. (1998). Indian Economy (S Chand, New Delhi).
- Agrawal, A. N. (Amar Nath). (1976). Indian economy : nature, problems and progress / [by] A. N. Agrawal. Delhi : Vikas Pub. House
- Dandekar, V. M., & Rath, N. (1971). Poverty in india-i: Dimensions and trends. Economic and Political *weekly*, 25-48.

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

(i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

(ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:
 Objective Type Questions: 30%
 Short/Long Questions: 70%

Assessment Tools:

- Assignment/Tutorials
- Sessional tests
- Surprise questions during lectures/Class Performance
- Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO106E03 .1	3	2	2	1	3	2	3	2
O5.0ECO106E03 .2	3	2	3	2	3	3	2	3
O5.0ECO106E03 .3	3	2	3	2	3	3	2	2
O5.0ECO106E03 .4	2	2	1	2	3	2	2	2

SEMESTER -IV

Manav Rachna International Institute of Research and Studies (MRIIRS)

(Deemed to be University under Section 3 of the UGC Act 1956)

INTERNATIONAL ECONOMICS -I

COURSE CODE: O5.0ECO201C01

Periods/week Credits

L:3 T:1 P:0 4

Duration of examination: 3Hrs

Pre-requisites: NIL

Course Type: Compulsory Course

Maximum marks:100

Continuous Assessment: 30

End Semester Examination:70

Course Outcomes

After completion of this course, the students will be able to:

O5.0ECO201C01.1: Understand the Significance and Dynamics of International Economic Organizations

O5.0ECO201C01.2: Gain the Knowledge of Various Theories of International Trade.

O5.0ECO201C01.3: Understand the Economies of Scale Under Various Forms of Trade.

O5.0ECO201C01.4: Demonstrate the Usefulness of International Trade and Critical Understanding of Trade Policies

Part-A

Unit-1: Introduction to International Trade

- 1.1 International Economics: Nature, Scope and Gains from Trade
- 1.2 Mercantilism View on Trade
- 1.3 The International Flow of Goods and Services
- 1.4 Role of International Agencies: UNCTAD, WTO, World Bank and IMF

Unit-2: Trade Theories

- 2.1. Trade Based on Absolute Advantage: Adam Smith
- 2.2. Trade Based on Comparative Advantage: David Ricardo; Opportunity Cost Theory
- 2.3. Heckscher-Ohlin Theory: Factor Intensity; Factor Abundance; Production Frontier
- 2.4. Factor Price Equalization Theory & Limitations

Part-B

Unit-3: Economies of Scale, Imperfect Competition and International Trade

- 3.1. External Economies of Scale
- 3.2. Internal Economies of Scale; Monopoly and Monopolistic Competition Model
- 3.3. Dumping and Reciprocal Dumping Model.
- 3.4. Trade Offer Curve: Origin, Definition, Derivation and Shape.

Unit-4: Instruments of Trade Policy

- 4.1. Import Tariff: Benefits, Distortion, Terms of Trade, Welfare Effects involving Graphical Representation and Numerical
- 4.2. Export Subsidy: Benefits, Distortion, Terms of Trade, Welfare Effects involving Graphical Representation and Numerical
- 4.3. Import Quota: Benefits, Distortion, Terms of Trade, Welfare Effects involving Graphical Representation and Numerical
- 4.4. Political Economy of Trade Policy: Trade Policy in Developed and Developing Nations

List of Suggested Text Books/Reference Books

- P R Krugman and Maurice Obstfeld: International Economics: Theory and Policy, Pearson
- Dominick Salvatore: International Economics: Trade and Finance, John Wiley
- Bo Sodersten: International Economics, Palgrave Macmillan
- M C Vaish and S Singh: International Economics. Oxford and IBH

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

(i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

(ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:	
Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO201C0 1.1	3				2	3		2
O5.0ECO201C0 1.2	3		2		2	3	2	
O5.0ECO201C0 1.3	3	3		3	2	3		2
O5.0ECO201C0 1.4	3	3		3	2	3		2

Manav Rachna International Institute of Research and Studies (MRIIRS)
(Deemed to be University under Section 3 of the UGC Act 1956)
ECONOMIC GROWTH AND DEVELOPMENT
COURSE CODE: O5.0ECO202C01

Periods/week Credits
L:3 T:1 P:0 4
Duration of examination: 3Hrs
Pre-requisites: NIL
Course Type: Compulsory Courses

Maximum marks: 100
Continuous Assessment: 30
End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

- O5.0ECO202C01.1: Develop Analytical Perspective about Advanced Macroeconomics
- O5.0ECO202C01.2: Understand the Synthesis Between Elementary and Modern Theories of Growth
- O5.0ECO202C01.3: Analyse the Impact of Growth Nationally and Internationally
- O5.0ECO202C01.4: Evaluate the Advanced Macroeconomic Models

Part-A

Unit-1: Introduction to Growth and Development

<https://www.linkedin.com/learning/the-undercover-economist-the-economics-behind-everyday-decisions-blinkist-summary/how-economics-shape-your-life-2?u=109705204>

- 1.1. Standard of Living: Economic Growth vs. Economic Development; Balanced vs. Unbalanced Growth Model.
- 1.2. Embodied and Disembodied Technical Progress and Economic Growth; Developed vs. Underdeveloped Countries (Low-Income, High-Income And Middle-Income Countries)

Unit-2: Elementary Theories of Growth <https://www.linkedin.com/learning/threat-modeling-information-disclosure-in-depth/allow-me-to-disclose-something?u=109705204>

- 2.1. Growth Theory: Introduction to Classical Model and Neoclassical Synthesis
- 2.2. Harrod-Domar Model and its Knife-Edge Problem
- 2.3. Domar Growth Model.

Unit-3: Modern Theories of Growth <https://www.linkedin.com/learning/economics-for-capital-markets/course-introduction?u=109705204>

- 3.1. Solow-Swan Model: Neoclassical Production Function
- 3.2. Fundamental Equation, Markets, Steady State, Golden Rule of Capital Accumulation
- 3.3. Dynamic Inefficiency and Transitional Dynamics

Part-B

Unit-4: Growth and Technical Progress <https://www.linkedin.com/learning/mind-mapping-for-business-analysis-and-project-management/leveraging-mind-mapping-to-unlock-business-clarity?u=109705204>

- 4.1. Solow Model and Technical Progress: Efficiency of Labour, Steady State with Technological Progress, Effects of Technological Progress

- 4.2. Growth Empirics: Balanced Growth.
- 4.3. Factor Accumulation versus Production Efficiency.
- 4.4. Applications of the Growth Model with Empirical Evidence

Unit-5: Advanced Macroeconomic Models

- 5.1. New Macroeconomics: An Overview of Rational Expectations and Random Walk of GDP
- 5.2. Perfect-Foresight Model; Derivation of Rational Expectations Model
- 5.3. Real Business Cycle Theory; New Keynesian Model of Sticky Nominal Prices.

List of Suggested Text Books/Reference Books

- Mankiw, N. Gregory author. (2016). Macroeconomics. New York :Worth Publishers
- Dornbusch, R., Fischer, S., & Startz, R. (2011). Macroeconomics. McGraw-Hill.
- blanchard o. (2018). macroeconomics 7th ed. pearson
- Salvatore, D. (2019). International economics. John Wiley & Sons. (Selected parts)
- Barro, R. J., & Sala-i-Martin, X. (2004). Economic growth. (selected part)

- Todaro, M. P., & Smith, S. C. (2020). Economic development. Pearson UK. (selected part)
- P. Thirlwall, 1989. "Growth and Development," Palgrave Macmillan Books, Palgrave Macmillan, (selected part)

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

- (i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

- (ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:
 Objective Type Questions: 30%
 Short/Long Questions: 70%

Assessment Tools:

- Assignment/Tutorials
- Sessional tests
- Surprise questions during lectures/Class Performance
- Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO202C0 1.1	3	3	1	1	3	3	2	2
O5.0ECO202C0 1.2	3	3			2	3	1	1
O5.0ECO202C0 1.3	2	3	1	2	3	3		2
O5.0ECO202C0 1.4	3		1		3	3	1	2

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PUBLIC ECONOMICS

COURSE CODE: O5.0ECO203C01

Periods/week Credits

L:3 T:1 P:0 4

Duration of examination:3Hrs

Pre-requisites: NIL

Course Type: Compulsory Courses

Maximum marks: 100

Continuous Assessment: 30

End Semester Examination:70

Course Outcomes

After completion of this course, the students will be able to:

O5.0ECO203C01.1: Enhance Skill to Apprehend the Basics of Public Finance by the Government

O5.0ECO203C01.2: Identify the Rationale of Taxation and Indian Tax Structure from Macro Perspective

O5.0ECO203C01.3: Understand Public Expenditure, Sources of Debt, and its Impact on the Economy

O5.0ECO203C01.4: Possess a Comprehensive Understanding of Public Budget and Fiscal Federalism.

Part-A

Unit-1: Introduction

- 1.1. Meaning and Scope of Public Finance, Public Finance versus Private Finance
- 1.2. Market Failure: Public Goods and Private Goods, Externalities: the Problems and Solutions
- 1.3. Efficiency versus Equity; Principles of Sound Finance and Functional Finance
- 1.4. Allocation, Distribution, Stabilization, and Growth Functions of the Government

Unit-2: Principles of Taxes

- 2.1. Source of Public Revenue Taxes, Classification of Taxes.
- 2.2. Canons of Taxation, Principles of Taxation Ability, Benefit, and Cost of Service
- 2.3. Impact, Incidence and Shifting of Taxation
- 2.4. Major Taxes in India. Value Added Tax In India the concept of Goods And Services Tax (GST).

Part-B

Unit-3: Public Expenditure and Public Debt

- 3.1. Public Expenditure: Meaning and Importance
- 3.2. Wagner's Hypothesis, Peacock-Wiseman Hypothesis
- 3.3. Classification of Public Expenditure, Reasons for the growth of Public Expenditure
- 3.4. Public Debt: Meaning Types of Public Debt, Debt Redemption

Unit 4: Indian Public Finance

- 4.1. Budget of The Government of India (Previous Financial Year)
- 4.2. FRBM Act 2004
- 4.3. Fiscal Federalism: Constitutional Provision of Fiscal Federalism, Cooperative fiscal federalism.
- 4.4. Finance Commission Recommendation: Functions and Importance

List of Suggested Textbooks/Reference Books:

- Musgrave (R.A) and Musgrave (P.B), (1989), Public Finance in Theory and Practice, 5th edition Tata McGraw Hill
- Bhatia H.L., (2012), Public Finance, Vikas Publications.
- Sury M.M., (1990), Government Budgeting in India, Commonwealth Publishers.

- Report of the Fourteenth Finance Commission, Government of India.
- Selected journal articles and reports provided by the concerned course coordinator.

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

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- (ii) For Summative assessment (End Semester Examination or End-Term Examination):

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Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO203C01.1	3	2	2		2	3	3	3
O5.0ECO203C01.2	3	3		2		3	3	2
O5.0ECO203C01.3	3	3		2		3	3	2
O5.0ECO203C01.4	3	2	2	3	2	3	3	3

Manav Rachna International Institute of Research and Studies
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QUANTITATIVE AND LOGICAL REASONING
COURSE CODE: O5.0ECO204C04

Periods/week Credits
L:1 T:1 P:0 2
Duration of examination: 2Hrs
Pre-requisites: NIL
Course Type: Compulsory Courses

Maximum marks:100
Continuous Assessment: 30
End Semester Examination:70

Course Outcomes

O5.0ECO204C04.1: Understand the Basic Concepts of Quantitative Ability
O5.0ECO204C04.2: Understand the Basic Concepts of Logical Reasoning Skills
O5.0ECO204C04.3: Acquire Satisfactory Competency in use of Reasoning
O5.0ECO204C04.4: Solve Campus Placements Aptitude Papers Covering Quantitative Ability, Logical Reasoning Ability

Part-A

Unit-1: Quantitative Ability (Basic Mathematics) <https://www.linkedin.com/learning/learning-everyday-math/welcome?u=109705204>

- 1.1. Basics Number Systems
- 1.2. LCM and HCF
- 1.3. Decimal Fractions
- 1.4. Square Roots and Cube Roots
- 1.5. Average

Unit-2: Quantitative Ability (Applied Mathematics) <https://www.linkedin.com/learning/programming-foundations-numerical-mathematics-and-calculations/numerical-mathematics-and-calculations-for-programming?u=109705204>

- 2.1. Logarithm
- 2.2. Permutation and Combinations
- 2.3. Probability
- 2.4. Simple and Compound Interest
- 2.5. Time, Speed and Distance
- 2.6. Time & Work

Part-B

Unit-3: Data Interpretation <https://www.linkedin.com/learning/excel-introduction-to-charts-and-graphs-23743448/craft-engaging-charts-and-graphs-in-excel?u=109705204>,
<https://www.linkedin.com/learning/excel-for-accounting/being-good-at-excel?u=109705204>

- 3.1. Data Interpretation
- 3.2. Tables
- 3.3. Column Graphs & Bar Graphs
- 3.4. Line Charts
- 3.5. Pie Chart
- 3.6. Venn Diagrams

Unit-4: Logical Reasoning (Deductive Reasoning) <https://www.linkedin.com/learning/improving-your-thinking-2022/why-does-thinking-matter?contextUrn=urn%3Ali%3AlyndaLearningPath%3A5eb1df9e498ed2de2f659673&u=109705204>

- 4.1. Analogy
- 4.2. Blood Relation
- 4.3. Directional Sense
- 4.4. Number and Letter Series
- 4.5. Coding – Decoding
- 4.6. Seating Arrangement

List of Suggested Text Books/Reference Books

- Aggarwal, R. S. (2000). *A Modern Approach to Verbal & Nonverbal Reasoning*. S. Chand.
- Analytical and Logical reasoning By Sijwal
- Aggarwal, R. S. (2012). *Quantitative Aptitude for Competitive Examinations*. S. Chand & Company Pvt Limited (Unit II, III).
- Analytical and Logical reasoning for CAT and other management entrance test (2018) by Sijwali B S
- GUHA, A. (2019). *QUANTITATIVE APTITUDE FOR CAT*. PHI Learning Pvt. Ltd..

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

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- (ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials
Sessional tests
Surprise questions during lectures/Class Performance
Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO204C04.1	3	2		1		3	3	2
O5.0ECO204C04.2	3	2			1	2	3	
O5.0ECO204C04.3	3	2	1		2	2	3	2
O5.0ECO204C04.4	3	2	2	2		3	3	2

Manav Rachna International Institute of Research and Studies (MRIIRS)
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DATA ANALYSIS AND VISUALIZATION USING R AND PYTHON
COURSE CODE: O5.0ECO251C04

Periods/week Credits
L:0 T:0 P:4 2
Duration of examination: 2Hrs
Pre-requisites: NIL
Course Type: Compulsory Courses

Maximum marks:100
Continuous Assessment: 30
End Semester Examination:70

Course Outcomes

After completion of this course, the students will be able to:

- O5.0ECO251C04.1: Gain Knowledge of Data Analysis in R
- O5.0ECO251C04.2: Handle Various Data and their Customize-Representation in Graphs Required for Economic Analysis
- O5.0ECO251C04.3: Command over Fundamentals of Python
- O5.0ECO251C04.4: Familiar with Python for Data Analysis for Economics

Part-A

Unit-1: R Software

- 1.1. R and R-Studio: Download and Install, User Interface; Packages and Help: R Console, R-Studio, GUI
- 1.2. R Data: Types and Objects, Reading and Writing Data in R Environment
- 1.3. R Language: Expressions, Objects, Symbols, Functions (Including Loop), Special Values
- 1.4. R Objects: Vectors, Integers, Characters, Logical, Complex, and Raw, Attributes of Objects

Unit-2: Real-time Applications in R

- 2.1. Exercise of data handling: import and edit real-time data
- 2.2. Exercise of data representation: hands-on practice of creating various charts
- 2.3. Exercise of basic data analysis: find out descriptive statistics and matrix operations
- 2.4. Exercise of bivariate data analysis: correlation and regression

Part-B

Unit-3: Basics of Python

- 3.1. Introduction to Python Language, Scope of Python, Various Integrated Development Environment (IDE) Software, and Usages
- 3.2. Installation, Basic Setup, User Interface
- 3.3. Basic Packages for Data Analysis

Unit 4: Real-time Applications in Python

- 4.1. Hands-on Practice of Data Handling using Pandas
- 4.2. Data Representation: The Hands-on Practice of Creating Various Charts using Matplotlib
- 4.3. Basic Statistical Analysis: The Hands-on Practice of Data Analysis using Statsmodel

List of Suggested Textbooks/Reference Books:

- Golemund, G. (2014). Hands-on programming with R: Write your own functions and simulations. " O'Reilly Media, Inc."
- Hilfiger, J. J. (2015). Graphing Data with R: An Introduction. " O'Reilly Media, Inc."
- Thomas J. Sargent, John Stachurski. (2023). Python Programming for Economics and Finance. QuantEcon.
- Sargent, T., & Stachurski, J. (2015). Quantitative economics with python. Technical report, Lecture Notes.

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O5.0SAHS100C09: SPORTS AND YOGA

Periods/week	Credits	Maximum Marks: 100
L:0 T:0 P: 2	0 (AP)	Continuous Evaluation: 70
Total Hours: 30		End Term Examination: 30
Duration of Examination: 1Hr		
Pre-requisite: NIL		
Course Type: Audit pass		

Course Outcomes:

The course will enable the student to-

O5.0SAHS100C09.1: Understand the importance of sound health and fitness principles as they relate to better health.

O5.0SAHS100C09.2: Participate in a variety of physical and yogic activities aimed at stimulating their continued inquiry about Yoga, physical education, health, and fitness.

PART-A

Unit 1: Introduction to Physical Education, Wellness & Lifestyle

Aims & Objectives of Physical Education, changing trends in Physical Education, Meaning of Physical Literacy & Importance of Physical Fitness & Wellness, Components of Physical fitness, Preventive strategies, and exercises for non-communicable lifestyle related problems Change, Therapeutic responses of physical activity on human body.

Unit 2: Fundamentals of Anatomy & Physiology in Physical Education

Effect of exercise on the functioning of Various Body Systems (Circulatory System, Respiratory System, Neuro-Muscular System etc.), Concept & advantages of Correct Posture, Assessment and Preventive measures of common postural deformities Flatfoot; Round Shoulders; Lordosis, Kyphosis, Scoliosis)

Unit 3: Yoga & Lifestyle

Elements of Yoga, Introduction- Asanas, Pranayama, Meditation & Yogic Kriyas, Yoga for concentration & related Asanas, Relaxation Techniques for improving concentration -Yog-nidra, Asanas preventive measures.

PART-B

Unit 4: On the Ground(Sports Activities)

List of Suggested Textbooks/Reference Books:

- Ajmer Singh and Rachpal Singh Brar, 2019, Essentials of Physical Education, Kalyani Publishers.
- B.K.S.Iyengar, 2015, Yoga for Sports, Westland publications.

Evaluation Tools:

Class **Quiz,** **Rubrics,** **Performance** **in** **sports**

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HISTORY OF ECONOMIC THOUGHT

COURSE CODE: O5.0ECO205E02

Periods/week Credits
L:2 T:1 P:0 3
Duration of examination: 3Hrs
Pre-requisites: NIL
Course Type: Elective Courses

Maximum marks: 100
Continuous Assessment: 30
End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

- O5.0ECO205E02.1: Comprehend the Development of The Theory Of Economics from a Historical Perspective
- O5.0ECO205E02.2: Make a Critical Comparison of Contributors of Main Schools of Thought
- O5.0ECO205E02.3: Understand the Economics of Welfare and Evaluate Keynes's Recommendations for Economic Policy
- O5.0ECO205E02.4: Distinguish between Ancient and Modern Indian Economic Thoughts

Part-A

Unit-1: Pre-Classical and Classical Thought

- 1.1. Pre-Classical Economic Thought: Mercantilism, Physiocracy
- 1.2. Classical Economics: Adam Smith- Division of Labour, Theory of Value, Views on Trade
- 1.3. Ricardo-Theory of Value and Theory of Distribution, Ideas on International Trade
- 1.4. Malthus - Theory of Population, Ricardo -Malthus Controversy over Gluts

Unit-2: Neo-Classical and Keynesian Thought

- 2.1. John Stuart Mill: Principles of Political Economy
- 2.2. Marxian Economics: Theory of Value, Theory of Capital Accumulation, Organic Composition of Capital, Theory Of Crisis
- 2.3. J. M. Keynes and His Policies
- 2.4. Neo-Keynesian Approaches

Part-B

Unit-3: Marginalist Thought

- 3.1. Essential Features of Marginalism
- 3.2. Jevons Theory of Value, Carl Menger's Theory of Value, G. Cassel's Theory of Value
- 3.3. Alfred Marshall and His Contribution
- 3.4. Walras' Theory of General Equilibrium

Unit 4: Welfare and Indian Economic Thought

- 4.1. Economics of Welfare: A.C. Pigou, V. Pareto
- 4.2. Indian Ancient Economic Thought: Kautilya's Arthashastra
- 4.3. Economic Thought in Modern India: Dadabhai Naoroji, Mahatma Gandhi, G.K. Gokhale, M.G. Ranade

List of Suggested Textbooks/Reference Books

- Bhatia, H.L. (2005). *A Comprehensive History of Economic Thought*. Oxford University Press
- Ganguli, B.N. (2010). *Indian Economic Thought*. New Age International
- Roll, E. (1969). *A History of Economic Thought*. Faber and Faber
- Backhouse, R. (2020). *A History of Modern Economic Analysis*. Wiley

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

- (i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

- (ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

.

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO205E02 .1	3		3		2	3	3	3
O5.0ECO205E02 .2	3			2		3		2
O5.0ECO205E02 .3	3	3	2	2		3		2
O5.0ECO205E02 .4	3	2	2	3	2	3	3	3

Manav Rachna International Institute of Research and Studies (MRIIRS)

(Deemed to be University under Section 3 of the UGC Act 1956)

INDIAN ECONOMY-II

COURSE CODE: O5.0 ECO206E03

Periods/week	Credits	Maximum marks: 100
L:2 T:1 P:0	3	Continuous Assessment: 30
Duration of examination: 3Hrs		End Semester Examination: 70
Pre-requisites: Indian Economy I		
Course Type: Elective Courses		

Course Outcomes

After completion of this course, the students will be able to:

- O5.0ECO206E03.1: Understand the Fundamental Trends & Issues Related to the Agriculture, Industry and Service Sector
- O5.0ECO206E03.2: Apply Micro and Macroeconomics Theoretical Frameworks to the Indian Context.
- O5.0ECO206E03.3: Build Analytical Skills to Comprehend the Economic Issues & Challenges India Faces.
- O5.0ECO206E03.4: Evaluate the Contemporary Economic Issues and Analyse the Current Economic Policies.

Part-A

Unit-1: India's Development Strategy

- 1.1. The Goal of Self-Reliance, Post-1991 Globalization Strategies Based on Stabilization & Structural Adjustment Packages.
- 1.2. Role of NITI Aayog
- 1.3. Demographic Trends including Demographic Dividend, India's Population Policy
- 1.4. Urbanization and Migration

Unit-2: Trends & Performance of Agriculture and Industry

- 2.1. Agriculture: Policies and Performance, Rural Credit, Land Reforms, MSP and Subsidies.
- 2.2. Rural Development Programmes and New Rural Employment Guarantee Scheme
- 2.3. Industry: Production Trends, Policies and Performance: New Industrial Policy, Micro, Small and Medium Enterprises (MSME)
- 2.4. Industrial Sickness in India, Privatization, and Disinvestment, MRTP Act and Competition Policy

Part-B

Unit-3: Contemporary Issues & policies

- 3.1. Employment: Occupational Structure in the Organized and Unorganized Sectors,
- 3.2. Social Issues Relating to Labour- Child Labour, Bonded Labour
- 3.3. International Labour Standards
- 3.4. Labour Laws in India

Unit-4: Social Issues and Policies

- 4.1. Social and Economic Infrastructure
- 4.2. Public Private Partnership
- 4.3. Growth of Domestic Savings and Investment in India
- 4.4. Growth, Trends and Performance in Services

List of Suggested Textbooks/Reference Books:

- Kapila, U. (2008). Indian Economy at Independence. _____. *Indian Economy Since Independence, 19, 31-34.*
- Misra, S. K., & Puri, V. K. (2005). *Indian economy* (Vol. 888). Himalaya Publishing House.
- Ray, S. K. (2007). *The Indian Economy*. PHI Learning Pvt. Ltd.
- Government of India: Economic Survey (latest); Five Year Plan
- Relevant journal articles (to be provided by course coordinator/faculty)

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

- (i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

- (ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

.

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.0ECO206E0 3.1	3	3	2	1		3		2
O5.0ECO206E0 3.2	3	2	1		1	2		

O5.0ECO206E0 3.3	3	2	1		2	2	3	3
O5.0ECO206E0 3.4	2	3	2	2		2		2

SEMESTER -V

Manav Rachna International Institute of Research and Studies (MRIIRS)
(Deemed to be University under Section 3 of the UGC Act 1956)
INTERNATIONAL ECONOMICS -II
COURSE CODE: O5.5ECO101C01

Periods/week Credits

L:3 T:1 P:0 4

Duration of examination: 3Hrs

Pre-requisites: International Economics-I

Course Type: Compulsory Course

Maximum marks:100

Continuous Assessment: 30

End Semester Examination:70

Course Outcomes

After completion of this course, the students will be able to:

O5.5ECO101C01.1: Understand Various Functions and Types of Foreign Exchange Markets

O5.5ECO101C01.2: Understand the Short Run Equilibrium in Open Economy

O5.5ECO101C01.3: Understand the Impact of Political Economy on Trade Policy and Exchange Rates

O5.5ECO101C01.4: Demonstrate the Effects Of Exchange Rates on the Global Economy.

Part-A

Unit-1: Exchange Rate and Foreign Exchange Market

- 1.1. Introduction & Functions of The Foreign Exchange Markets
- 1.2. Purchasing Power Parity Theory: Absolute & Relative
- 1.3. Fixed Exchange Rate and Foreign Exchange Intervention (Monetary & Fiscal Policy)
- 1.4. Managed Floating and Sterilized Intervention

Unit-2: Output and Exchange Rate

- 2.1. Derivation of Goods Market and Money/Asset Market Equilibrium
- 2.2. Interest Parity Condition (Three-Part Diagram)
- 2.3. Short Run Equilibrium in Open Economy
- 2.4. J Curve Effect

Part-B

Unit-3: The Political Economy of Trade Policy and Exchange Rates

- 3.1. Political Arguments for Free Trade: Free Trade and Efficiency
- 3.2. Bretton wood Agreement
- 3.3. International Trade Agreements: A Brief History, the Uruguay Round, From the GATT to WTO.
- 3.4. Free Trade Areas versus Customs Union, Trade Creation and Trade Diversion.

Unit-4: Equilibrium in the Foreign Exchange Market

- 4.1. Foreign Exchange Markets And Equilibrium in The Foreign Exchange Market,
- 4.2. Exchange Rate and Relative Prices, Interest Parity: The Basic Equilibrium Condition,
- 4.3. Effects of Exchange Rates Changes on Expected Returns
- 4.4. Purchasing Power Parity, Absolute PPP and Relative PPP, Empirical Testing on PPP

List of Suggested Text Books/Reference Books

- P R Krugman and Maurice Obstfeld: International Economics: Theory and Policy, Pearson
- Dominick Salvatore: International Economics: Trade and Finance, John Wiley
- Bo Sodersten: International Economics, Palgrave Macmillan
- M C Vaish and S Singh: International Economics. Oxford and IBH

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

(i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

(ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Course Articulation Matrix

CO ents	PO- 1	PO- 2	PO-3	PO- 4	PO- 5	PSO- 1	PSO-2	PSO-3
O5.5ECO101C0 1.1	2	2	3	2	1	2	1	2
O5.5ECO101C0 1.2	3	1	2	1	2	1	2	1
O5.5ECO101C0 1.3	1	3	1	1	3	2	2	2
O5.5ECO101C0 1.4	2	2	2	2	2	1	1	2

Manav Rachna International Institute of Research and Studies
(Deemed to be University under Section 3 of the UGC Act 1956)
DEVELOPMENT ECONOMICS
COURSE CODE: O5.5ECO102C01

Periods/week Credits
L:3 T:1 P:0 4
Duration of examination: 3Hrs
Pre-requisites: Economic Growth and Development
Course Type: Compulsory Courses

Maximum marks: 100
Continuous Assessment: 30
End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

- O5.5ECO102C01.1 Explain the Various Theories and Models of Growth and Development
- O5.5ECO102C01.2 Explain the Role of Globalization on Economic Growth and Development
- O5.5ECO102C01.3 Interpret the Various Indicators of Growth & Development
- O5.5ECO102C01.4 Apply the Various Growth Models with Empirical Validations

Part-A

Unit-1: Concept of Development

- 1.1. Economic growth vs economic development; Measurement of economic development
- 1.2. Approaches to development: traditional view, modern views- from per capita income to human welfare to the concept of sustainable development
- 1.3. Obstacles to economic development and development indicators

Unit-2: Poverty and Inequality

- 2.1. Concepts of poverty and inequality
- 2.2. Measures of inequality: Lorenz Curve, Gini coefficient, Kuznets curve hypothesis
- 2.3. Measures of poverty: FGT index (head count ratio, poverty gap ratio, etc), Multidimensional poverty (concept)

Part-B

Unit-3: Theories of Development

- 3.1. Rostow stages of development
- 3.2. Lewis model, Harris-Todaro model, Fei-Ranis model for dual economy
- 3.3. Balanced vs unbalanced growth theory\
- 3.4. Vicious circle of poverty and low-level equilibrium trap, critical minimum effort theory

Unit-4: Obstacles of Development

- 4.1. Process of cumulative causation and regional inequalities
- 4.2. International inequality and Centre-periphery models
- 4.3. Development policies: Case studies of poverty reduction, employment generation, health intervention, educational intervention, SHGs and empowerment, and trade policy

List of Suggested Textbooks/Reference Books

- D Ray: Development Economics, Oxford
- M P Todaro and S Smith: Economic Development, Pearson
- A Sen: Development as Freedom, Oxford

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

(i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

(ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.5ECO102C01.1	3	3			2	2	1	2
O5.5ECO102C01.2	3	3	1		1	3		2
O5.5ECO102C01.3	2	3	1		3	2		2
O5.5ECO102C01.4	1	3	3	2	3	3	2	3

Manav Rachna International Institute of Research and Studies (MRIIRS)

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INDUSTRY TRAINING

COURSE CODE: O5.5ECO151C06

Periods/week Credits

L: 0 T: 0 P: 4 2

Duration of examination: 2Hrs

Pre-requisites: NIL

Course Type: Compulsory Courses

Maximum marks: 100

Continuous Assessment: 30

End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

O5.5ECO151C06.1: Identify the Scope of Career Opportunity in the Field And Prepare for a Career in Economics

O5.5ECO151C06.2: Gain Experience on Economic Analysis and Methods by Means of Pre-Professional Experience

O5.5ECO151C06.3: Demonstrate their Domain Knowledge to Apply in the Organization while Involved as Intern

O5.5ECO151C06.4: Critically Evaluate the Use of Economic Analysis in Practice by Involving with an Organization

The objective of internship program is to give students real-world experience at a workplace where they can use their domain knowledge. The internship provides a learning experience and it is expected that the interns will receive mentoring on-the-job. Students will be responsible for researching opportunities and attaining their own internship position.

A completed and signed Internship Agreement must be submitted in advance, and must include the employer's job description documenting the proposed internship experience and how that experience will contribute to the learning outcomes. There will be a faculty member to be assigned for monitoring the student during internship programme, and the student must inform his/her progress to concerned faculty member at Department. The purpose of this assessment is to provide the student intern with constructive feedback on his/her internship experience.

Course Requirements:

Students must be involved in the internship equivalent to 'four hours/week for the duration of Eight weeks'. Students should undergo the internship during the summer vacation (i.e., at the end of the second year). Students should do the internship relevant to the economic discipline either under public or private institutions, which allows them to explore contemporary issues and challenges, data collection and literature review by assisting the institutions. Every week, one practical classes shall be held at the department with an assigned mentor, and the rest of the practical tasks will be treated as internship training.

After completing the internship, the students must write a final reflection report about the internship experience. The report should include a self-evaluation of what they gained through the experience, what challenges they faced and identify experiences or coursework that helped them prepare for the duties performed in this position. Describe the internship experience using economic reasoning and methods by the organization and critically evaluate their effectiveness and limitations.

Report should be a minimum of ten single-spaced printed pages with font Times New Roman size 12.

Continuous assessment

- Feedback by external supervisor of internship organization: 15 Marks (30%)
- Feedback by internal mentor assigned by the Department: 15 marks (30%)
- Feedback by external during Viva and Presentation: 20 Marks (40%)

Internship report presentation (50%) and viva (50%)

This evaluation form should be completed by the internship site supervisor or the individual who is most responsible for supervising the intern's work assignments. The student's grade is partially based on both external and internal evaluations of performance on each of the internship dimensions identified below. Use the evaluation rubric to assess the student's performance on each dimension by specifying a score based on the performance ratings against each criteria mentioned in the rubric form.

- **Internal Evaluation (30 Marks)**

Evaluation Dimensions	Needs Improvement		Meets Expectations		Performed Very Well	Score
	(Very Poor) 1	(Poor) 2	(Good) 3	(Very Good) 4	(Excellent) 5	
Evaluation by Internal Mentor (15 Marks)						
Timely Registration	Late Registration after regular reminder		On time registration		Before/timely registration and submitted acceptance letter from company/NGO	/05
Quality of Work	Work was careless and inconsistent; assignments were late and needed revision; Submitted reflective report very late.		With a few minor mistakes, completed most work assignments on schedule and submitted report on time.		Thoroughly and accurately performed all work Requirements of the company; submitted all work assignments on time. Timely Submission of report.	/05
Maintaining weekly activity log book and regular discussion with the Supervisor	Was absent excessively and/or was almost late/Communication gap between student and supervisor. Not able to maintain the weekly diary.		Usually reported to work as scheduled and was almost on-time/ regular discussion with the supervisor. Maintained the activity diary with few/minor exceptions.		Always reported to work as scheduled with no absences and was always on time/ frequent discussions with the supervisor. Regularly maintained a diary about his/her learning in the company.	/5
Total						/15
Evaluation by the Supervisor of Internship Company/Organisation (15 Marks)						
Completion of Hours	Unable to complete/very hardly completed the required hours of		Almost completed/completed the required hours of work		More than/accurately completed of required hours of	/10

	work assigned by Company	assigned by company	work assigned by the company	
Level of work engagement and learning in the company	required close supervision and showed little interest in meeting standards; did not seek out additional work and frequently procrastinated in completing assignments; suggested no new ideas or options	Worked without extensive supervision; in some cases, found problems to solve and sometimes asked for additional work assignments; normally set his/her own goals and offered some creative ideas. Showed interest to learn new skills.	Was a self-starter; consistently sought new challenges and asked for additional work assignments; regularly approached and solved problems independently; frequently proposed innovative and creative ideas. Ambitious and enthusiastic about learning new skills.	/5
Total				5 /1
Total Internal Evaluation Marks				0 /3

- External Evaluation (20 Marks)

Evaluation Dimensions	Needs Improvement		Meets Expectations		Excellent	Score
	(Very Poor) 1	(Poor) 2	(Good) 3	(Very Good) 4	5	
Level Understanding	The student is not able to understand the topic and its practical implications.		The student has shown his/her skill to understand the topic and its practical implications		The student has a thorough understanding of his/her work and its relevance and applicability.	/5
Relevance of Internship	Not able to learn all necessary skills to apply in the economics domain area		Trying to learn all necessary skills to apply in the economics domain area.		Learnt all necessary skills, tools and methods which can be helpful in applying in the economics domain area	/5

Quality of Report	The report is poorly written in terms of clarity, grammar, punctuation and plagiarism.	The report is well written.	The report is well-organised, clear and without plagiarism.	/5
Presentation and Viva	Poor presentation and unable to answer the questions asked during Viva.	Good presentation and answered most of the queries.	Well-designed Slides and Fluent Presentation. Well Addressed the questions of the external examiner.	/5
Total External Evaluation Marks				0 /2

COURSE ARTICULATION MATRIX

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.5ECO151C0 6.1	3		3		2	3	3	3
O5.5ECO151C0 6.2	3			2		3		2
O5.5ECO151C0 6.3	3	3	2	2		3		2
O5.5ECO151C0 6.4	3	2	2	3	2	3	3	3

Manav Rachna International Institute of Research and Studies
(Deemed to be a University under Section 3 of the UGC Act 1956)
Community Connect
COURSE CODE: O5.5ECO152C06

Periods/week Credits
L:0 T:0 P:4 2
Duration of examination: 2Hrs
Pre-requisites: NIL
Course Type: Compulsory Courses

Maximum marks: 100
Continuous Assessment: 30
End Semester Examination:70

Course Outcomes

After completion of this course, the students will be able to:

O5.5ECO152C06.1: Understand Rural Community Dynamics, Components and the Importance of Rural Community

Development

O5.5ECO152C06.2: Demonstrate Technical Competencies to Assess and Analyse Rural Problems and Their Needs.

O5.5ECO152C06.3: Able to Reflect the Depth of Issues and their Interlinkages to Different Aspects of the Community.

O5.5ECO152C06.4: Learn the Different Field-Level Intervention Techniques for Rural Community Development and Implementation Of Policy And Programmes At The Grassroots Level.

1.Observation visits to rural communities/villages: Firstly, students will visit nearby villages and village communities with an open mind without any prenotation. They will be instructed to observe and interact with the community. The location will be fixed beforehand, and the accompanying faculty member should be in that place.

2.Interaction with rural communities: Observe, interact and enquire about the local organisation and its functioning. During this visit, they will intensively interact with local groups to understand socio-economic issues. Mapping their economic condition using Participatory rural appraisal (PRA) and Focused Group Discussion (FGD) in the local setting. Instructors are advised to explain PRA and FGD before the field visit. Self-help groups or any community-led organisation are preferable for FGD.

3.Identify/ study/ explore the rural problems and Case Study: After mapping different socio-economic issues in the FGD, the student group will come up with multiple issues, based on which students shall be divided into multiple groups. Each group may finalise a specific issue for further investigation and undertake a case study. The case study can be done on different issues such as financial inclusion, entrepreneurship development, access to microfinance, market linkage, agricultural extension services, rural tourism development, cooperative development, skill development programs, policy advocacy, etc.

4.Policy Discussion: After the case study, all groups of students will have a discussion session regarding different issues and development policies in their case study. Simultaneously, discussion regarding the implementation of policies, its limitations and potential intervention in their field area needs to be discussed by each group. Students are encouraged to contribute to the community with the help of local NGOs working in their field area with different community sensitisation methods.

5.Report and Presentation: The group will prepare the reflective report of the case study and citing their experiences and difficulties, and after that, each student group will present their experiences and findings before the department.

The objective of the Community connect course is to give students real-world experience at a workplace where they can use their domain knowledge. Students are required to undertake 'four hours/week for the duration of Eight weeks'. Every week, one theory class shall be held at the department with an assigned mentor. There will

be a faculty member assigned to monitor the student during the Field Survey program, and the student must inform his/her progress to concerned faculty members in the Department. A completed and signed Field Survey Agreement must be submitted in advance which clearly shows the role and responsibility.

Course Requirements

Students are required to undertake a case study by forming their group. They are required to observe, engage and understand the community dynamics, problems at the grassroots and different policy relevance in their field.

Students can engage in various social activities in connection with local NGOs and contribute to their activities related to the underprivileged section of society in nearby campuses..

After completing the Field Survey, the students must write a final reflection report about the community connect experience and case study of the issue undertaken by them. The report should include a self-evaluation of what

they gained through the experience, what challenges they faced and identify experiences or coursework that helped them prepare for the duties performed in this position. Apart from this, students can describe their Field Survey experience using economic reasoning and critically evaluate the policies and their effectiveness and limitations.

Evaluation Tools:

Continuous assessment

- Feedback by external supervisor of internship organization: 15 Marks (30%)
- Feedback by internal mentor assigned by the Department: 15 marks (30%)
- Feedback by external during Viva and Presentation: 20 Marks (40%)

Field Visit report presentation (50%) and viva (50%)

This evaluation form should be completed by the NGO/organisation supervisor or the individual who is most responsible for supervising the students work assignments. The student's grade is partially based on both external and internal evaluations of performance on each of the dimensions identified below. Use the evaluation rubric to assess the student's performance on each dimension by specifying a score based on the performance ratings against each criteria mentioned in the rubric form.

- **Internal Evaluation (30 Marks)**

Evaluation Dimensions	Needs Improvement		Meets Expectations		Performed Very Well	Score
	(Very Poor) 1	(Poor) 2	(Good) 3	(Very Good) 4	(Excellent) 5	
Evaluation by Internal Mentor (15 Marks)						
Quality of Work	Work was careless and inconsistent; assignments were late and needed revision; Submitted reflective report very late.		With a few minor mistakes, completed most work assignments on schedule and submitted reports on time.		Thoroughly and accurately performed all work Requirements of the company; submitted all work assignments on	/05

			time. Timely Submission of report.	
Maintaining weekly activity log book and regular discussion with the Supervisor	Was absent excessively and/or was almost late/Communication gap between student and supervisor. Not able to maintain the weekly diary.	Usually reported to work as scheduled and was almost on-time/regular discussion with the supervisor. Maintained the activity diary with few/minor exceptions.	Always reported to work as scheduled with no absences and was always on time/frequent discussions with the supervisor. Regularly maintained a diary about his/her learning in the company.	/5
Completion of Hours	Unable to complete/very hardly completed the required hours of work assigned by the faculty.	Almost completed/completed the required hours of work assigned by the faculty	More than/accurately completed of required hours of work assigned by the faculty.	/10
Level of work engagement and learning in the company	Required close supervision and showed little interest in engaging with the community; frequently procrastinated to meet the community.	Explored communities and trying to understand their context and policy relevance to them. Engaged in community welfare programs.	Ambitious and enthusiastic about exploring communities with empathy and keen to understand their context and policy relevance to them. Actively engaged in community welfare programs	/5
Case Study and Discussion	Poor Case study and unaware about policy in their field area.	Good Case study and discussed regarding policy in their field area.	In depth Case study and very actively discussed regarding policy in their field area.	/5
Total				/15
Total Internal Evaluation Marks				/30

- **External Evaluation (20 Marks)**

Evaluation Dimensions	Needs Improvement		Meets Expectations		Excellent	Score
	(Very Poor) 1	(Poor) 2	(Good) 3	(Very Good) 4	5	

Level of Understanding	The student is not able to understand the topic and its practical implications.	The student has shown his/her skill to understand the topic and its practical implications	The student has a thorough understanding of his/her work and its relevance and applicability.	/5
Relevance of Field Visit	Not able to explore socioeconomic issues of the community and different policies implications. No case study was done.	Trying to explore socioeconomic issues of the community and different policies implications and provided case study.	Explored socioeconomic issues of the community and different policy implications and came up with an interesting case study	/5
Quality of Report	The reflective report is poorly written in terms of clarity, grammar, punctuation and plagiarism.	The reflective report is well written.	The reflective report is well-organised, clear and without plagiarism.	/5
Presentation and Viva	Poor presentation and unable to answer the questions asked during Viva.	Good presentation and answered most of the queries.	Well-designed Slides and Fluent Presentation. Well Addressed the questions of the external examiner.	/5
Total External Evaluation Marks				/20

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.5ECO152C06.1	1	3	0	2	0	2	0	3
O5.5ECO152C06.2		3	1		3	2	0	2
O5.5ECO152C06.3		3	1		2	3	1	3
O5.5ECO152C06.4	1	2	3		3	3	0	3

Manav Rachna International Institute of Research and Studies (MRIIRS)
(Deemed to be University under Section 3 of the UGC Act 1956)
DATA ANALYSIS THROUGH- STATISTICAL SOFTWARE- STATA
COURSE CODE: O5.5ECO153E02

Periods/week Credits
L:0 T:0 P:6 3
Duration of examination:3Hrs
Pre-requisites: NIL
Course Type: Elective Courses

Maximum marks:100
Continuous Assessment: 30
End Semester Examination:70

Course Outcomes

After completion of this course, the students will be able to:

- O5.5ECO153E02.1: Understand the Basic Concepts of STATA.
- O5.5ECO153E02.2: Calculate Measures of Central Tendency and Dispersion in STATA.
- O5.5ECO153E02.3: Estimate Various Statistical Tests in STATA.
- O5.5ECO153E02.4: Perform Regression Analysis using Various Data in STATA.

Part-A

Unit-1: Introduction to STATA

- 1.1. Overview of STATA; Interface, Data Editor, Do File, Dropdown Menu, STATA Help
- 1.2. Data Management in STATA; Import Data from Different Formats, Export Data, Edit, Replace, Drop
- 1.3. Basic Data Analysis in STATA; Gen and Egen, Merging Data from Separate Files, Data Transformations: Encoding, Log

Unit-2: Descriptive statistics in STATA

- 2.1. Measure of Central Tendency and Dispersion
- 2.2. Graphical representation in data; Creating graphs
- 2.3. Descriptive statistics; tabulate and codebook, NFHS database usage

Part-B

Unit-3: Statistical tests in STATA

- 3.1. Hypothesis Testing in STATA
- 3.2. T-test, Chi-square Test, ANOVA
- 3.3. Time-Series test; Stationary Test

Unit 4: Basic analysis in STATA

- 4.1. Linear Bivariate/Multivariate Regression Model, Post Estimations, Interpretation of Results
- 4.2. Time Series Modelling; ARMA, ARIMA
- 4.3. Hands-on Practice using National and International Data Base

List of Suggested Textbooks/Reference Books:

- Acock, A. C. (2008). A gentle introduction to Stata. Stata press.
- Beckett, S. (2013). Introduction to time series using Stata (Vol. 4905, pp. 176-182). College Station, TX: Stata Press.
- Cameron, A. C., & Trivedi, P. K. (2010). Micro econometrics using STATA(Vol. 2). College Station, TX: Stata press.
- Mitchell, M. N. (2008). A visual guide to Stata graphics. Stata Press.

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

(i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

(ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

There will be three components: Written exam (20%), Practical (60%), and Viva (20%).

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.5ECO15 3E02.1	3					3	3	
O5.5ECO15 3E02.2		3	2	2	2		3	
O5.5ECO15 3E02.3		3	2	2	2		3	
O5.5ECO15 3E02.4		3	3	3	2		3	2

Manav Rachna International Institute of Research and Studies (MRIIRS)

(Deemed to be University under Section 3 of the UGC Act 1956)

**RESEARCH METHODOLOGY
COURSE CODE: O5.5ECO103E02**

Periods/week Credits
L:2 T:1 P:0 3
Duration of examination: 3Hrs
Pre-requisites: NIL
Course Type: Elective Courses

Maximum marks: 100
Continuous Assessment: 30
End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

- O5.5ECO103E02.1: Understand the Importance and Types of Research.
- O5.5ECO103E02.2: Comprehend Various Research Designs and Data Collection Techniques.
- O5.5ECO103E02.3: Compare the Various Sampling Techniques for Collection of Data
- O5.5ECO103E02.4: Create and Implement a Research Proposal for The Real-Life Economic Problems

Part-A

Unit-1: Basics of Social Science Research Methods

- 1.1. Foundations of Research: Meaning, Objectives, Motivation, Utility.
- 1.2. Criteria of Good Research Design
- 1.3. Flow Chart of Research Process

Unit-2: Research Process

- 2.1. Meaning and Rationale of Research Design
- 2.2. Types: Descriptive, Exploratory and Experimental Designs.
- 2.3. Scaling Techniques and Types of Scale

Part-B

Unit-3: Sampling and Types of Sampling

- 3.1. Concepts of Statistical Population: Sampling, Sample, Sample Frame, Sampling Error.
- 3.2. Characteristics of a Good Sample.
- 3.3. Types of Sampling, Probability Sampling and Non-Probability Sampling
- 3.4. Determining the Sample Size –Cleaning of Data and its Coding.

Unit 4: Ethical Issues in Research

- 4.1. The layout of a standard research paper, the structure of a review paper,
- 4.2. Ethical issues related to Publishing, Plagiarism and Self-Plagiarism.
- 4.3. Digital Checking of Plagiarism

List of Suggested Textbooks/Reference Books:

- Bajpai, N. 2017. Business Research Methods, 2nd Edition, Pearson Publication, India
- Kothari, C. 2104. Research Methodology – Methods and Techniques, 2nd Edition, New Age International
- Cooper, D., Schindler, P. 2106. Business Research Methods, 9th Edition, Tata McGraw Hill,

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

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Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

labus and all the COs (up to BTL 3). There will be no choice in question 1. In Part B (question number 2 to 5), there can be an internal choice between each of the questions covering the same (set) of COs and BTL. All COs will be covered in Part B

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.5ECO103E0 2.1	3	1	2	1	2	3	3	2
O5.5ECO103E0 2.2		2	3		3		3	3
O5.5ECO103E0 2.3		2	3	2	2	1	3	3
O5.5ECO103E0 2.4	3		3		3	2	2	3

Manav Rachna International Institute of Research and Studies (MRIIRS)
(Deemed to be University under Section 3 of the UGC Act 1956)
UNDERSTANDING SUSTAINABLE DEVELOPMENT GOALS
COURSE CODE: O5.5ECO104E03

Periods/week	Credits	Maximum marks: 100
L:2 T:1 P:0	3	Continuous Assessment: 30
Duration of examination: 3Hrs		End Semester Examination:70
Pre-requisites: NIL		
Course Type: Elective Courses		

Course Outcomes

After completion of this course, the students will be able to:

- O5.5ECO104E03.1: Understand the Basic Concept of Sustainable Development (SD) and the Environmental, Social, and Economic Dimensions.
- O5.5ECO104E03.2: Develop an Encompassing Understanding of Sustainability Issues.
- O5.5ECO104E03.3: Demonstrate Capability in Designing Specialized Methodology for Developing and Implementing Localized, Sustainable Development Measures
- O5.5ECO104E03.4: Demonstrate Knowledge to Integrate and Analyse, Assess and Deal with Scenarios, and Issues.

Part-A

Unit-1: Introduction to Sustainable Development:

- 1.1. Broad Introduction to SD - Its Importance, Need, Impact and Implications; Definition Coined; Evolution of SD Perspectives (MDGs and SDGs).
- 1.2. The Distinction Between Development and Sustainable Development
- 1.3. 1987 Brundtland Commission and Outcome; Later UN Summits (Rio Summit, Etc.) and Outcome.
- 1.4. Inter-Relationship and Transition from MDG to SDGs

Unit-2: Sustainable Development Goals:

- 2.1. No Poverty, Zero Hunger, Good Health and Well-Being, Quality Education, Gender Equality
- 2.2. Clean water and Sanitation, affordable and clean energy, Decent Work and Economic Growth,
- 2.3. Industry, Innovation and Infrastructure, Reduced Inequalities, Sustainable Cities and Communities
- 2.4. Responsible production and consumption, climate action, life below water, life on land, peace justice and strong institutions, partnership for the goals.

Part-B

Unit-3: Realizing the SDGs

- 3.1. Circular Economy, Inclusive Society, Sustainable Cities, Transport, Digital Revolution
- 3.2. Innovation and Infrastructure, Goal-Based Business Models, Sustainable Designs, Technology
- 3.3. Renewable Energy, Sustainable Production and Consumption

Unit-4: Financing and Implementing SDGs

- 4.1. Types of Financing, New Financing Mechanisms and Global Funds
- 4.2. Governance and Policy Tools Such as Openness, Participation, Accountability, Effectiveness and Coherence
- 4.3. OECD's Framework for Policy Coherence for Sustainable Development

List of Suggested Textbooks/Reference Books:

- Sachs, Jeffrey D. The age of sustainable development. Columbia University Press, 2015
- Dalby, Simon, et al. Achieving the Sustainable Development Goals: Global Governance Challenges. Routledge, 2019.
- Elliott, Jennifer. An introduction to sustainable development. Routledge, 2012.
- Nhamo, Godwell, and Vuyo Mjimba. Sustainable Development Goals and institutions of higher education. Springer, 2020.

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

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Discussion/Presentation	15%
Projects/Group Activities etc	15%

- (ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

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Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.5ECO104E 03.1	2	2	2	2	2	3	2	3

O5.5ECO104E 03.2	2	3	3	1	3	3		2
O5.5ECO104E 03.3	3		1	3		3	2	3
O5.5ECO104E 03.4	3	2	3		3	3		

SEMESTER -VI

Manav Rachna International Institute of Research and Studies (MRIIRS)

(Deemed to be a University under Section 3 of the UGC Act 1956)

BASIC ECONOMETRICS

COURSE CODE: O5.5ECO201C01

Periods/week Credits

L:3 T:1 P:0 4

Duration of examination: 3Hrs

Pre-requisites: Statistical Methods in Economics- I

Course Type: Compulsory Courses

Maximum marks: 100

Continuous Assessment: 30

End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

O5.5ECO201C01.1: Explain the Basic Theories and Models of Econometric Analysis

O5.5ECO201C01.2: Analysis Various Economic Problems through Econometric Models

O5.5ECO201C01.3: Implement Econometric Methods in Quantitative Research

O5.5ECO201C01.4: Emphasis on Understanding the Tools of Econometrics and Applying them in Practice

Part-A

Unit-1: Fundamentals of Econometrics

- 1.1. Introduction: Definition, Scope and Goals of Econometric Theory
- 1.2. Key Stages of Econometrics, Desirable Properties of Econometrics
- 1.3. Econometric Terminologies: Sample Statistic vs. Population Parameter, Estimates vs. Estimators, Population Regression Function vs. Sample Regression Function.

Unit-2: Simple Linear Regression Analysis

- 2.1. CLRM: Classical Linear Regression Model using Normal Equations.
- 2.2. Introduction to Stochastic Error Term with its Assumptions
- 2.3. Gauss-Markov Theorem: BLUE Properties (with proof)
- 2.4. Testing of Hypothesis about Regression Parameters and Statistical Inference, Coefficient of Determination, Prediction with the Simple Regression Models.

Part-B

Unit-3: Multiple Regression Analysis

- 3.1. Three Variables Linear Regression Model, Interpretation of Estimated Partial Regression Coefficients.
- 3.2. General Regression Model in Matrix Notation and Corresponding Gauss-Markov Properties
- 3.3. R^2 as Goodness of Fit and its Adjustment
- 3.4. Hypothesis Testing: Simple vs Partial Regressions Coefficients, Testing Joint Hypothesis.

Unit-4: Problems in OLS Methods

- 4.1. Omission of a Relevant Variable; Inclusion of Irrelevant Variable; Tests of Specification Errors,
- 4.2. Analysis of Residuals: Heteroscedasticity and Autocorrelation and their Nature, Causes, Consequences, detection, remedy
- 4.3. Problem of Multicollinearity and their Consequences, Detection and Remedies

List of Suggested Textbooks/Reference Books:

- Gujarati, D. N., & Porter, D. C. (2003). Basic Econometrics. McGraw-Hill Higher Education.
- Stock, J. H., Watson, M. W., Wooldridge, J. M., & Wooldridge, J. M. Introductory Econometrics: A Modern Approach (4 th International).
- Greene, W. (2012) Econometric Analysis. 7th Edition, Prentice Hall, Upper Saddle River.
- D N Gujarati: Basic Econometrics, McGraw Hill
- J M Wooldridge: Econometrics, Cengage
- A Koutsoyiannis: Theory of Econometrics, Palgrave Macmillan

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

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Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials
Sessional tests
Surprise questions during lectures/Class Performance
Term end examination

AQAR 2023-24 Jan to Dec 2023 Research Publications + Book Chapters + Books , other than Scopus and WoS Indexed
Course Articulation Matrix

CO Statements	P O- 1	PO- 2	PO- 3	PO- 4	PO- 5	PSO -1	PSO -2	PSO -3
O5.5ECO201C01.1	2	1	3	2	2	2	2	3
O5.5ECO201C01.2	2	2	2	1	1	1	2	1
O5.5ECO201C01.3	1	1	1	1	1	2	2	2
O5.5ECO201C01.4	3	2	3	2	2	1	1	2

Manav Rachna International Institute of Research and Studies (MRIIRS)

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MONETARY ECONOMICS

COURSE CODE: O5.5ECO202C01

Periods/week Credits
L:3 T:1 P:0 4
Duration of examination: 3Hrs
Pre-requisites: NIL
Course Type: Compulsory Courses

Maximum marks: 100
Continuous Assessment: 30
End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

- O5.5ECO202C01.1: Familiarize with the Theory Behind Money.
- O5.5ECO202C01.2: Understand the Theory of Money Supply.
- O5.5ECO202C01.3: Understand the Theory of Money and Rate of Interest.
- O5.5ECO202C01.4: Analyse and Understand the Monetary Policy of India.

Part-A

Unit-1: Basics of money

- 1.1. Barter System: Evolution of Money and its Functions.
- 1.2. Types of Money: Commodity Money, Fiat Money, and Reserve Money
- 1.3. Theories of Money: Don Patinkin, Friedman, and Gurley & Shaw Approaches.

Unit-2: Theories of Money Supply

- 2.1. Monetary Aggregates: Traditional and New; Velocity of Money; Determinants of Money Supply
- 2.2. Money Supply Determination: Money Multiplier Approach, Simple Deposit Multiplier, Complete Deposit Multiplier
- 2.3. Currency Multiplier; Money Supply Curve; Neutrality and Non-Neutrality of Money.

Part-B

Unit-3: Value of Money and Interest Rate

- 3.1. Time Value of Money: Term Structure of Interest Rates
- 3.2. Expectation Hypothesis: Segmented Market Hypothesis and Preferred Habitat Hypothesis
- 3.3. Yield Curve: Determinants of Interest Rates.

Unit-4: Monetary policy

- 4.1. Components of Monetary Policy: Targets and Instruments of Monetary Policy
- 4.2. Limitations of Monetary Policy
- 4.3. Monetary Policy in India (Including the Monetary Policy Committee of India).

List of Suggested Textbooks/Reference Books:

- Mishkin, F. S. (2007). The economics of money, banking, and financial markets. Pearson education.
- Lewis, M. K., & Mizen, P. D. (2000). Monetary economics. OUP Catalogue.
- Jadhav, N. (2006). Monetary Policy, Financial Stability, and Central Banking in India. Macmillan.
- Thorn, R. S. (1976). Introduction to money and banking. (No Title).

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Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.5ECO202C01. 1	3		3		2	3	3	3
O5.5ECO202C01. 2	3			2		3		2
O5.5ECO202C01. 3	3	3	2	2		3		2
O5.5ECO202C01. 4	3	2	2	3	2	3	3	3

Manav Rachna International Institute of Research and Studies (MRIIRS)
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COMPARATIVE ECONOMIC DEVELOPMENT
COURSE CODE: O5.5ECO203E02

Periods/week Credits
L:2 T:1 P:0 3
Duration of examination: 3Hrs
Prerequisites: NIL
Course Type: Elective Courses

Maximum marks: 100
Continuous Assessment: 30
End Semester Examination: 70

Course Outcomes

O5.5ECO203E02: 1 Understand the Historical Development Path of Different Countries
O5.5ECO203E02: 2 Learn the Linkages Between Agriculture in The Industrialization Process
O5.5ECO203E02: 3 Understanding the Process of Industrialization and Industrial Working Class
O5.5ECO203E02: 4 Analyze the Contribution of The State in Industrial Transition

Part-A

Unit-1: Overview of the selected countries and agricultural development

- 1.1. Britain: Agricultural Revolution and Prerequisites for Industrial Revolution.
- 1.2. Japan: Overview of Samurai and Edo Governance in the Japanese economy. Overview of the agricultural sector: Phase I and Phase II.
- 1.3. China: An overview of the Qing and Ming dynasties in the Chinese economy, state of agriculture.

Unit - 2: Industrialization transformation

- 2.1. Britain: Textile revolution, Infrastructure Revolution and Industrial revolution in Global Landscape
- 2.2. Japan: Growth of industries- silk, machinery and cotton
- 2.3. China: Industrial transformation and High equilibrium trap.

Part-B

Unit - 3: Recent Challenges and Role of State

- 3.1. Britain: Causes and consequences for Britain exiting the European Union: A critical evaluation.
- 3.2. Japan: Role of Banks in Japanese Growth, Japanese current export led growth and population pyramid.
- 3.3. China: Demography dividend, Dead Aid: Reasons and Consequences of Chinese investment in African economies.

List of Suggested Textbooks/Reference Books

- Davies, R. (1998). *Soviet economic development from Lenin to Khrushchev*. Chapters 1, 2, 3, 4, 5, 6, 7, 8. Cambridge University Press.
- Dobb, M. (1966). *Soviet economic development since 1917*. Chapter 17. Routledge.
- Ha-Joon Chang. 2002. *Kicking Away the Ladder—Development Strategy in Historical Perspective*. London: Anthem Press. Chapter 2, 46-51.
- Hughes, J., Cain, L. (1994). *American economic history, 4th ed*. Chapters 2, 3, 7, 21. Harper Collins College Publishers.
- Hayami, Y. (1975). *A century of agricultural growth in pre-war Japan: Its relevance to Asian development*. Chapters 1, 3. University of Minnesota Press.
- Hobsbawm, E. (1968). *Industry and empire: An economic history of Britain since 1750*. Chapters 1, 2, 3, 5, 6, 12. Weidenfeld & Nicholson.
- Hobsbawm, E. (1984). *Worlds of labour: Further studies in the history of labour*. Chapter 11. Weidenfeld & Nicholson

- Johnson, C. (1982). *MITI and the Japanese miracle: The growth of industrial policy 1925-1975*. Chapter 1. Stanford University Press.
- Macpherson, W. (1995). *The economic development of Japan 1868-1941*. Chapters 1, 2, 3, 4, 6. Cambridge University Press.
- Norman, E. (2007). *Japan's emergence as a modern state: Political and economic problems of the Meiji period*. Chapters 3, 4. University of British Columbia Press.
- Okochi, K., Karsh, B., Levine, S. (1974). *Workers and employees in Japan: The Japanese employment relations system*. Chapter 13. Princeton University Press.
- Paul, G., Robert, C. (1990). *Soviet economic structure and performance, 3rd ed*. Chapters 4, 7. Harper and Row.
- Tauger, M. (2004). Soviet peasants and collectivization 1930-39: resistance and adaptation. *Journal of Peasant Studies*, 31: 3-4. 427-456.

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Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials
 Sessional tests
 Surprise questions during lectures/Class Performance
 Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.5ECO203E02.1	1	2		1	3	3		3
O5.5ECO203E02.2	1	3	1		2	3		2
O5.5ECO203E02.3	1	2			3	2		1
.O5.5ECO203E02.4	2	2		3	0	3	3	1

Manav Rachna International Institute of Research and Studies (MRIIRS)
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ENVIRONMENT AND RESOURCE ECONOMICS
COURSE CODE: O5.5ECO204E02

Periods/week Credits
L:2 T:1 P:0 3
Duration of examination: 3Hrs
Pre-requisites: NIL
Course Type: Elective Courses

Maximum marks: 100
Continuous Assessment: 30
End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

- O5.5ECO204E02.1: Understand Environmental Economics Foundations
- O5.5ECO204E02.2: Analyse Externalities and Market Failure
- O5.5ECO204E02.3: Understand The Alternative Environmental Policy Designs
- O5.5ECO204E02.4: Understand Extraction of Natural Resource in Different Market Structure

Part A

Unit 1: Environment and Economy

- 1.1. Interlinkages Between the Economy and Environment: The Circular Flow
- 1.2. Welfare Implication of Environmental Degradation, Environmental Kuznets Curve (EKC) Hypothesis
- 1.3. Sustainable Development

Unit 2: Efficiency and Market Failure

- 2.1. Pareto Optimality, Presence of Externalities and Market Failure
- 2.2. Property Rights and the Coase Theorem
- 2.3. Public Goods/ Bads and Market Failure

Unit 3: Environmental Policy: Design and Implementation

- 3.1. Pigouvian Fees – Fees vs Subsidies
- 3.2. Regulating Pollution: Command and Control, Economic Incentives
- 3.3. Tradable Pollution Permits
- 3.4. Community-Based Approaches

Part B

Unit 4: Economics of Natural Resource

- 4.1. The Efficient and Optimal Use of Natural Resources
- 4.2. Non-Renewable Resource: Two Period Model, Extraction in Competitive and Monopolistic Market
- 4.3. Renewable Resource: Steady-State Harvest, Socially Efficient Harvesting, Forestry Models
- 4.4. Any Other Relevant Issue, e.g. Energy.

List of Suggested Textbooks/Reference Books:

- Charles Kolstad, *Environmental Economics*, Oxford University Press, 2nd edition, 2010.
- Hanley N, Shogren J.F. & White B. *Environmental Economics in Theory and Practice*, Macmillan
- Robert N. Stavins (ed.), *Economics of the Environment: Selected Readings*, W.W. Norton, 5th edition, 2005.
- Roger Perman, Yue Ma, James McGilvray and Michael Common, *Natural Resource and Environmental Economics*, Pearson Education/Addison Wesley, 3rd edition, 2003.
- Maureen L. Cropper and Wallace E. Oates, 1992, “*Environmental Economics: A Survey*”, *Journal of Economic Literature*, Volume 30, pp. 675-740.
- Elinor Ostrom. 2008. The challenge of common-pool resources. *Environment: Science and Policy for Sustainable Development*

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

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MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

- (ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
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O5.5ECO204E0 2.1	3	1			1	3		1
O5.5ECO204E0 2.2	2	2			3	3		0
O5.5ECO204E0 2.3	0	2			2	2		3
O5.5ECO204E0 2.4	1	2			2			1

Manav Rachna International Institute of Research and Studies (MRIIRS)

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TERM PAPER

COURSE CODE: O5.5ECO251E08

Periods/week Credits

L:0 T:0 P:12 6

Duration of examination: 3Hrs

Pre-requisites: Research Methodology

Course Type: Elective Courses

Maximum marks: 100

Continuous Assessment: 30

End Semester Examination: 70

Course Outcomes

After completion of this course, the students will be able to:

O5.5ECO251E08.1 Able to Identify Research Problems.

O5.5ECO251E08.2 Ability to Seek Relevant Literature Pertaining to Research Problems.

O5.5ECO251E08.3 Equip with Hands-on Experience with Real-Time Data to Address Research Problems.

O5.5ECO251E08.4 Develop Aptitudes Towards writing an Academic Research Paper.

Term Paper is intended to develop proficiency in writing research reports by identifying research problems, reviewing literature pertaining to the study and interpreting and assessing the information and ideas. In this course, students are expected to explore theoretical knowledge and use their analytical skill set to develop an aptitude towards writing academic research papers. For the supervision of each student, a faculty member will be assigned as a guide, and the students will be required to choose a topic in consultation with the supervisor.

The students are expected to adhere to the following timeline while submitting term papers:

Month	Task
Month 1	The department will assign a supervisor to the students.
Month 1	Choosing a Topic: Techniques for selecting a research-worthy topic.
Month 2	Research Proposal: Crafting a compelling proposal and securing approval.
Month 3	Literature Review: Conducting and organising a thorough literature review.
Month 4	Data Collection and Analysis: Strategies for gathering and analysing data.
Month 5	Writing the Research Paper: Structuring chapters, maintaining academic tone, and citing sources.
Month 5	Editing and Formatting: Applying style guides and preparing for submission. Defence Preparation: Tips for presenting and defending your dissertation.

*Two weekly practical classes will be held at the department with an assigned departmental supervisor; the rest of the supervisor will assign practical tasks as a self-study of the student.

Evaluation Tools:

Continuous Evaluation:

- Submission of thesis (50%)
- Progress report by assigned supervisor (50%)

End semester presentation with viva:

Thesis presentation (50%) and viva (50%)

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.5ECO251E 08.1	2	2	2	3	2	3	2	1
O5.5ECO251E 08.2	1	1	1	2	1	3	2	2
O5.5ECO251E 08.3	2	3	2	1	2	2	1	3
O5.5ECO251E 08.4	2	1	3	2	2	1	2	2

AQAR 2023-24 Jan to Dec 2023 Research Publications + Book Chapters + Books , other than Scopus and WoS Indexed

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ECONOMICS OF EDUCATION
COURSE CODE: O5.5ECO205E03

Periods/week Credits
L:2 T:1 P:0 3
Duration of examination: 3Hrs
Pre-requisites: Public Economics
Course Type: Elective Courses

Maximum marks: 100
Continuous Assessment:30
End Semester Examination:70

Course Outcomes

After completion of this course, the students will be able to:

- O5.5ECO205E03.1: To Understand the Nature And Scope of the Economics of Education
- O5.5ECO205E03.2: Analyse the Demand for Educational Services
- O5.5ECO205E03.3: Analyse the Supply of Educational Services
- O5.5ECO205E03.4: Explore the Contemporary Issues Concerning Education in India

Part-A

Unit-1: Economics of Education

- 1.1. Economics of Education: Meaning, Nature, and Scope
- 1.2. The Human Capital Approach to Education; Becker's Approach to Human Capital and Income Distribution
- 1.3. Human Capital and Rate of Return

Unit-2: Demand for Educational Services

- 2.1. Education as a Public Good
- 2.2. Nature of Demand for Educational Services: Consumption Good and Investment Good, Private, and Social Demand for Education
- 2.3. Social Demand for Education: Measurement of Cost of Education, Spence's Theory of Signalling

Part-B

Unit-3: Supply of Educational Services

- 3.1. Nature of Educational Services; Funding of Education: Role of the State versus Market
- 3.2. Budget Equation for Educational Institutions
- 3.3. Education Production Function

Unit 4: Education in India

- 4.1. Contemporary Issues concerning the Education sector (Primary, Secondary and Higher Education)
- 4.2. Vocational Education and Shadow Education
- 4.3. Policy on Education: NEP 2020

List of Suggested Textbooks/Reference Books:

- Chattopadhyay, Saumen. (2012), Education and Economics: Disciplinary Evolution and Policy Discourse, OUP
- Becker, Gary S. (1975), *Human Capital: A theoretical and Empirical Analysis with Special Reference to Education*, Second Edition, New York: Columbia University Press for NBER.
- (MHRD, 2020) National Education Policy 2020
- Economic Survey

Instructions for paper setting: Seven questions are to be set in total. First question will be multiple choice covering entire syllabus and will be compulsory to attempt and will be of 18 marks. Three questions will be set from each Part A and Part B (one from each unit). Student needs to attempt two questions out of three from each part. Each question will be of 13 marks.

Evaluation Policy:

The evaluation will include two types of assessments:

(i) Continuous or formative assessments (in the form of end semester examination or term examination. Weightage of assessments are as follows:

For continuous or Formative assessment (in semester): Maximum 30 percent. The categorization for the same is:

MCQs	30%
Subjective (Short/Long)	40%
Discussion/Presentation	15%
Projects/Group Activities etc	15%

(ii) For Summative assessment (End Semester Examination or End-Term Examination):

Minimum: 70 percent. Categorization for the same is:

Objective Type Questions:	30%
Short/Long Questions:	70%

Assessment Tools:

Assignment/Tutorials

Sessional tests

Surprise questions during lectures/Class Performance

Term end examination

Course Articulation Matrix

CO Statements	PO-1	PO-2	PO-3	PO-4	PO-5	PSO-1	PSO-2	PSO-3
O5.5ECO205E03.1	3	3	3	3	3	3	3	3
O5.5ECO205E03.2	3	3			3	3	2	2
5.5 ECO205E03.3	3	3	3	2	3	3	3	2
O5.5ECO205E03.4	2	3				3		

