JAIN CENTRE FOR DISTANCE AND ONLINE EDUCATION

JAIN ONLINE

Master of Arts
[Online Mode]

Student Handbook

** The University reserves its right to update/change any part of these regulations as approved by the competent authority*

www.jainuniversity.ac.in

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1. About the Program

This is a Master's Level program, leading to the grant of a degree of Master of Arts (MA) of JAIN (Deemed-to-be University). This two-year program offers core courses elective courses and a comprehensive research project intermediary apart from an option to pursue a cross-functional and open elective. The MA degree is highly valued for its emphasis on analytical thinking, communication skills, and expertise in a specific subject area. Graduates of MA programs often pursue careers in academia, research, government, non-profit organizations, or various industries, depending on their area of specialization. Another avenue that opens up after completing the program is that of teaching or pursuing research initiatives through a PhD. Along with functional and domain expertise, the program will also equip one with the competencies and skills required to advance one's career into leadership and strategic roles. The Research project requires one to carry out in-depth research in an area of interest. This will allow learners to practice learnings from the program. The learner will also be encouraged to publish the research with the support of a mentor. The curriculum of many electives encompasses courses from global professional accreditation bodies to give one that edge required to compete and succeed.

Program Educational Objectives:

PEO1: To apply knowledge effectively in achieving academic and professional goals.
PEO2: To develop critical thinking and analytical skills for evaluating complex ideas and societal issues.
PEO3: To design and conduct independent research, contributing innovative ideas to their field.
PEO4: To understand cultural diversity, ethical perspectives, and global issues, acting responsibly in diverse settings.
PEO5: To develop a Global View among Students so that they appreciate Diversity in the world and Individual Pursuits.

Program Outcomes:

PO1: Demonstrate Knowledge in advanced micro and macroeconomic theories.
PO2: Engage in scientific inquiry, critical thinking, using quantitative and qualitative methods of Economics.
PO3: Develop proficiency in economic analysis and policy evaluation across diverse domains.
PO4: Appraise knowledge of theories, and empirical findings for making economic policy decision.
PO5: Integrate learning of applied economics to evaluate the recent development in economy.
PO6: Asses domestic and global socio-economic issues inflation, unemployment.
PO7: Engage in inter- disciplinary collaboration to foster holistic approach to economic problem solving.

Graduate Attributes:

- Advanced Academic Expertise
- Strategic Thinking
- Research and Analysis Skills
- Leadership and Collaboration
- Adaptability and Lifelong Learning
- Professionalism and Ethics
- Global and Societal Impact
- Leadership and Management

2. Program Options

The following options are offered:

1. English
2. Economics
3. Public Policy

Indication of Option: The candidate is required to indicate his/her option at the time of admission. Options cannot be changed after the commencement of the Program.

3. Admission

Eligibility: Pass an Undergraduate (Bachelor) Program of a minimum duration of Three (3) years in any stream from a UGC-recognized University, with a minimum aggregate of 50% or an equivalent letter/numerical grade. A relaxation of 5% shall be given to SC/ST candidates.

Candidates who are in the final semester of the Bachelor Programme are also eligible to apply.

Academic Documents: A color scan of the below-mentioned original document is required to be uploaded on the admission portal at the time of seeking admission –

i. Grade sheet of Class 10
ii. Grade sheet of Class 12
iii. Grade sheet of all the Semesters of Bachelor's Degree / Consolidated mark sheet
iv. Degree Certificate / Provisional Degree Certificate
v. Aadhar Card for Indian Nationals and Passport for Foreign Nationals

Scans from a photocopy or a faxed copy are not accepted. The University reserves the right to demand a hard copy of the original document as part of the process of verifying the authenticity and may revoke the admission at any time for non-fulfillment of any eligibility requirements.

Admission Intake: There will be two intakes in a year – the January Cycle and the July Cycle.

4. Duration and Credits

The duration of the MA Program is 2 years divided into 4 Semesters. The concept of credit is used to define the weightage of a course in the curriculum. Each course earns 4 credits totaling 90 program credits.

Table: Distribution of Credits

Semester	No. of Courses	Total Credits
1	5	20
2	5	20
3	6*	24
4	6#	26

* Includes one Open Elective Course
# Includes one Cross-Functional Elective Course and Research project

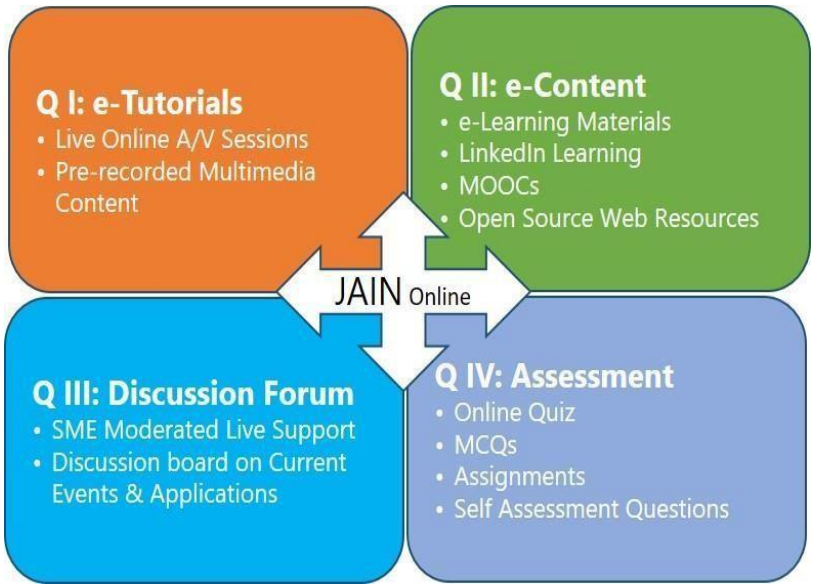
A total of 2700 learning hours ensures that a student has acquired knowledge at par with the face-to-face classroom mode of delivery and learning over the two years.

5. Program Delivery

Mode of Program Delivery: Online

Pedagogy: Program delivery follows the prescribed four Quadrants approach resulting in maximum learner engagement. Each course involves 120 hours of learning (1 credit equals 30 learning hours). A combination of the following formats will be used: two-way live online audio-video lectures, pre-recorded audio-video lectures available on the University Management System (UMS), multimedia content, interactions through the discussion forum on the UMS, exhaustive e-content/printed material for in-depth reference, self-study activities that Includes Assignments, Quiz and Multiple Choice Questions (MCQ), Essay-type questions, Case Study, etc., individual and group projects, programming exercise, dissertation, Massive Open Online Courses (MOOC) and various experiential learning methods.

Fig: Four Quadrant Approach



University Management System: Our UMS platform has been designed to engage and inspire a learner by providing access to all the learning resources including texts, videos, screencasts, and lecture recordings; participate in discussion forums; and communicate with the faculty and the program team. A learner has the option to take up the several quizzes and the MCQs that follow at the end of every unit of the course, track learning progress, submit assignments, and much more.

e-Learning Material: A learner is provided access to an exhaustive and customized e-Learning Material (e-LM) on the UMS. The e-LM will also indicate sources of additional readings and resources available on the internet.

Medium of instruction: The medium of instruction and examination is English.

e-Tutorials: Two-way live interactive sessions will be scheduled on Saturday for 5-7 hours.

6. Assessment Scheme

The performance of students will be based on Continuous Assessment (CA) and End Semester Examination (ESE) as per the weightage given in the following table:

Table: Distribution of Weightage (CA: ESE)

Assessment Type	Weightage (%)
Continuous Assessment	30
End Semester Examination	70
Total	**100**

Assessment of performance in Research Project is based on – Project Synopsis (Weightage 15%) Interim Report (Weightage 15%) Five-minute Video Presentation on the project (Weightage 20%) and Project Report (Weightage 50%)

7. Criteria for Continuous Assessment

The assessment scheme is designed not only to assess the attainment of course outcomes by the learner but also to help and guide them to undertake systematic studies. The Continuous Assessment (CA) marks will be awarded based on Three Assignments.

There are three Continuous Assessments. Each continuous assessment will be for 30 marks.

- The first assessment will be scheduled after the completion of Module 2 of the course (Post Week 5). (Questions will be from Module 1 and Module 2).

- The second assessment will be scheduled after the completion of Module 4 of the course (Post Week 10). (Questions will be from Module 3 and Module 4)

- The third assessment will be scheduled after the completion of Module 5 of

the course (Post Week 12). (Questions will be from Module 1, 2, 3, 4 and 5 (weightage approx. 50%).

- The average of the best two scores out of the three assessments will be considered as the Continuous Assessment marks.

Assessment Details:

Window Period: According to Calendar of Events
Maximum Duration: 60 minutes in a single sitting (After Login)
Number of attempts: One
Portion: 2 Modules for CA1 and CA2; All 5 Modules for CA3
NOTE: Once you start attempting the assessment, you do not have the option of pausing or completing it partially. You have to complete the entire assessment in a single attempt.
These MCQs will be based on the application of concepts learned (real-life or hypothetical situations) and case studies and will require substantial preparation by the learners.

Each question in the CA and ESE will be carefully mapped to the attainment of Course Outcomes considering the levels as per Bloom's Taxonomy.

Additional Information on Assessment:

1. Each MCQ will have four options of which only one of them will be correct.
2. There will be no negative marking for selecting a wrong response, hence students are advised to attempt all the questions.
3. The assessment will have to be attempted online as per the schedule notified.
4. A learner will be required to take an assignment in a single sitting of a maximum of 60 minutes (based on login).
5. The assessment can be attempted only once during the schedule announced using any device.
6. Certain Courses may have a different pattern of CA.

8. End-Semester Examination

Examination mode: Online Proctored Examination

System requirement: A desktop or laptop computer with a working webcam and microphone facility connected to a stable and non-shared internet connection for the

entire duration of the examination.

Exam Date: The University will conduct End Semester Examination (ESE) for both odd and even Semesters twice a year. ESEs are usually conducted around the 18th Week from the commencement of the Semester. The schedule of examination may change as per guidelines issued by the University Grants Commission (UGC) and/or relevant authority.

Eligibility: The student should have 75% participation in all activities of the program.

Examination fee and registration: In the first attempt, a learner has to register for all the courses of the Semester by paying the prescribed examination fee. For subsequent attempts, a learner can pay the examination fee on a per-course basis. The prescribed examination fee will have to be paid as per the due date and is non-refundable nor will it be adjusted towards subsequent examinations in case a student does not appear in examinations of any courses.

Exam Duration: 180 Minutes, Single sitting (based on login)

Maximum Marks: 70

Eligibility for Pass: A learner shall be declared to have passed a course if he/she secures a minimum C Grade in that course.
In addition,

i) A minimum of 40% marks in aggregate (Total of scores in Continuous Assessment and End Semester Examination) is required to secure a C Grade; and
ii) A minimum of 25 marks should be scored separately out of 70 marks in the End Semester Examination.

Similarly, a learner shall be declared to have passed in Master Thesis / Project if he/she secures a minimum of 40% in aggregate.

i) A minimum of 40% marks in aggregate

9. Grading Scheme

The University awards the grades and grade points for each course as per the below table:

Table: Grade and Grade Point

Grade	A+	A	B+	B	C+	C	F
Corresponding Grade Point	10	9	8	7	6	5	0
Percentage of Marks	≥90 - ≤100	≥80 - <90	≥70 - <80	≥60 - <70	≥50 - <60	≥40 - <50	< 35
CLASS	Outstanding	Excellent	VeryGood	Good	Above Average	Pass	Fail

The Semester performance of a student will be indicated as "Semester Grade Point Average (SGPA). The SGPA will be the weighted average of Grade Points of all letter grades received by a student for all the Course units in the semester.

The final Grade Card will indicate Cumulative Grade Point Average (CGPA) and shall be based only on Grade Points obtained in courses for which units have been earned.

9.Question Paper Pattern

The End Semester Examination (ESE) for 70 marks will have the following pattern* –

Section – A: 50 Marks

(A learner is advised to assign 90 -120 minutes to this section)

This section will have 50 MCQs of 1 mark each with varying difficulty levels. Each MCQ will have four options of which only one of them will be correct. There will be no negative marking for selecting a wrong response, hence learners are advised to attempt all the questions.

Section - B: 20 Marks

(A learner is advised to assign 60-90 minutes to this section)

This section will have a 6 descriptive questions requiring descriptive answers of 5 marks each, and students will be required to answer any 4 of them. Generally, a word count of 200 to 300 words is sufficient to provide a satisfactory answer to a 5-mark question.

** Certain Courses may have a different pattern of ESE.*

1. **Re-examination Policy**
   i) A learner has to register by paying a prescribed fee to reappear for End Semester Examination as per notification issued by the University subject to completion of a

program within the maximum period prescribed.

i) The Continuous Assessment marks originally secured by the learner, in the first appearance in the course(s) if any, will be carried forward

10. Promotion Policy

Learners will be promoted from one year to another provided they have paid all the fee dues and do not have any discipline cases pending against them. Appearing in the CA may be considered while deciding the promotion. They should however note that they have to pass each course as per the passing requirements and earn the minimum credit units required for the award of a degree/ qualification.

11. Award of Degree

The Learner will be awarded the Master of Arts degree upon fulfillment of the following criteria:

i. Must have passed all the courses of the four semesters.
ii. Must have complied with all other assessment guidelines and criteria notified during the conduct of the Program.
iii. Must have submitted the UG Convocation degree certificate.

The Degree Certificate will indicate the elective opted by the learner.

12. Semester Break

With prior approval, a learner may be allowed to take a break (temporary withdrawal) from the Program for a Semester or more for valid reasons of health/career. The learner shall be allowed to continue the program after re-registration as per the university norms.

13.Research Project

Students undertake a project after the end of third semester. It provides an opportunity for the students to apply classroom learning and practice in an industry environment. The duration of the project is a minimum of 8 weeks. A learner can work with a company as an intern, undertake project, perform activities identified by the company and assist the organization in its functions or alternatively can carry out an independent research in the chosen elective area. The learner is required to submit a project report in the prescribed format. Learners are encouraged to convert their research into a paper/case and publish in association with a mentor.

Learners who intend to pursue a career in teaching/academic set-up will be provided an

opportunity to work as a Teaching Assistant In lieu of Research Project and will have to undertake all academic activities as advised by a Subject Matter Expert (SME) in respect of a course.

The assessment will be according to pre-defined Rubrics based on performance Indicators like Similarity Check (Plagiarisms), Quality of References, Continuity of Work, Attainment of Learning Outcomes and Overall Quality in terms of potential of publishing/ Patenting. While the students will give a certificate of it being his/ her original work, they will also give a No Objection Certificate of it being published or patented under the name of JAIN (Deemed-to-be University).

14.Academic Integrity and Ethics

i) A learner who has committed an act of academic dishonesty will be deemed to have failed to meet a basic requirement of satisfactory academic performance. Thus, academic dishonesty is not only a basis for disciplinary action but also is relevant to the evaluation of student's level of performance and progress.

ii) Where there has been violation of the basic ethos and principles of academic integrity and ethics, the Dean/Board of Examiners/Course Coordinator may use their discretion during the Semester on the disciplinary action to be taken.

iii) Academic dishonesty includes, but is not necessarily limited, to the following:
    a. Using more than one gadget/device during the conduct of the online examination
    b. Switching off the webcam during the conduct of the online examination;
    c. Cheating or knowingly assisting another learner in committing an act of cheating;
    d. Unauthorized possession of learning material, examination materials, destruction or hiding of relevant materials;
    e. Act of plagiarism;
    f. Unauthorized changing of marks or marking on examination records

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July 2025

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Program Outcomes

PO1	Demonstrate Knowledge in advanced micro and macroeconomic theories.
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PO5	Integrate learning of applied economics to evaluate the recent development in economy.
PO6	Asses domestic and global socio-economic issues inflation, unemployment.
PO7	Engage in inter- disciplinary collaboration to foster holistic approach to economic problem solving.

PSO

PSO1	Apply theories, models, and tools of Economics to analyse socio- economic issues and formulate viable solutions.
PSO2	Demonstrate professional competencies to investigate socio-economic issues, extracting qualitative and quantitative data, critically examining its impacts for resource allocation, distribution, and exchange.
PSO3	To inculcate sustainable deeper analysis of sustainable economic decisions ,bridging sustainable linkages with communities, thereby giving a boost to civic engagement.

Table of Content

Course Matrix and Syllabus

Semester-1

Course Code	Course Name	Course Category	CA	ESE	Credits
25VME3C101	Advanced Micro Economics	CC	30	70	4
25VME3C102	Advanced Macro Economics	CC	30	70	4
25VME3C103	Mathematics for Economics	CC	30	70	4
25VME3C104	Indian Economy & Development Goals	DSC	30	70	4
25VME3C105	Economics in Technology & AI Integration	AEC	30	70	2
25VMX0S105	Generative AI for online learners	SEC	30	70	2
Total No of Credits					20

Semester-2

Course code	Course Name	Course category	CA	ESE	Credits
25VME3C201	History of Economic Thought	CC	30	70	4
25VME3C202	Statistics for Economics	CC	30	70	4
25VME3C203	Development Economics	DSC	30	70	4
25VME3C204	Economic Models and Emerging Trends	AEC	30	70	4
25VME3C205	Financial Economics & AI in Market Analysis	SEC	30	70	4
Total No of Credits					20

Semester-3

Course code	Course Name	Course category	CA	ESE	Credits
25VME3C301	Fundamentals of Econometrics	CC	30	70	4
25VME3C302	Welfare Economics	CC	30	70	4
25VME3C303	Behavioural Economics	CC	30	70	4
25VME3C304	Environment and Resource Economics	DSC	30	70	4
25VME3C305	Research Methodology	MDC	30	70	4
25VME3C306	Open Elective	OEC	30	70	4
Total No of Credits					24

Semester-4

Course code	Course Name	Course category	CA	ESE	Credits
25VME3C401	International Economics	CC	30	70	4
25VME3C402	Public Finance	CC	30	70	4
25VME3C403	Economics of Health and Education	DSC	30	70	4
25VME3C404	Applied Monetary Economics	AEC	30	70	4
25VME3C405	Economics of Innovation and Digital Economy	SEC	30	70	4
25VME3C406	Research Project	Thesis			6
Total No of Credits					26

Semester I

Courses

Detailed Syllabus

Course Title	Advanced Micro Economics
Course Code	25VME3C101
Semester	**I**
Credits	**4**
Course Type	Core Course
Learning Hours	120
Live Sessions	**12 hours**

Course Description:
This course provides a comprehensive understanding of microeconomic theories and their practical applications in business and policy-making. It covers consumer behavior, production and cost analysis, market structures, and pricing strategies, along with general equilibrium and welfare economics. It equips learners with analytical tools to understand decision-making by individuals and firms under various market conditions. The course also emphasizes real-world relevance through models like Cobb-Douglas and CES production functions, pricing strategies, and information asymmetry in markets. Its industry relevance lies in enhancing economic reasoning for strategic planning, policy formulation, and optimizing business operations, making it essential for roles in economics, business consulting, finance, and managerial decision-making.

Course Outcomes (COs)

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Analyse consumer behaviour using advanced utility analysis techniques	L4
CO2	Apply production and cost theories to real-world business decision-making scenarios involving profit maximization and cost minimization.	L3
CO3	Evaluate pricing strategies and outcomes in different market structures.	L5
CO4	Assess general equilibrium and welfare economics theories with ESG considerations to assess sustainability, social justice, and economic policy effectiveness.	L5
CO5	Examine the impact of asymmetric information on markets	L4

Course Module

No. of hours:24

Module 1: Theory of Consumer Behaviour
Scope of Module: Covers consumer choices, demand analysis, and utility theory—vital for market research, pricing strategies, and consumer behaviour insights in business.
Topics: Demand function and demand forecasting, Utility analysis - Indifference curves, optimum choices, income and substitution effect, Slutsky and Hicks decomposition of income and substitution effect of normal, inferior and giffen goods, revealed preference theory (weak and strong axioms) Recent developments in the theory of demand: Demand under uncertainty and digital consumer behavior, AI-assisted demand estimation. Attribute theory of demand
Learning Outcome: Apply consumer behavior, demand forecasting, and utility theories to analyze market trends, optimize pricing, and support strategic business decisions.

No. of Hours:24

Module 2: Theory of Production and Cost
Scope of Module: Explore production theory, cost analysis, and decision-making using tools like Cobb-Douglas, CES functions, and revenue-profit models.
Topics: Production Function, short -term & long -term production function, Cobb-Douglas Production Function, CES Production Function, Marginal rate of technical substitution, cost functions, short run & long run cost function, long run traditional and modern theories of costs, economies and diseconomies of scale, Modern Theories of Cost (in the short run and long run), Economies of Scope, Profit maximization, concepts of revenue, Simon's views on rational decision-making in business
Learning Outcome: Analyze production processes, apply cost and revenue concepts, and use economic models to enhance efficiency and support strategic business decisions.

No. of Hours:24

Module 3: Pricing in Various Market Structures
Scope of Module: Learn market structures, pricing strategies, equilibrium analysis, and models like Cournot, Bertrand, and Stackelberg to assess firm behavior.

Topics:
Perfectly competitive market and equilibrium of competitive market, meaning of monopoly, sources of monopoly power, monopoly market equilibrium, Short-run Equilibrium and Long-run Equilibrium, price discrimination – first, second and third degree, tax incidence, oligopoly - Non-collusive (Cournot, Bertrand, Edgeworth, Chamberlin, Kinked Demand Curve and Stackelberg's Solution) and Collusive (Cartels and Mergers, Price Leadership) Monopolistic Competition – equilibrium, Short-run Equilibrium and Long-run Equilibrium, product differentiation and selling cost. Alternative theories of the firm: Baumol's Sales Revenue Maximization Model

Learning Outcome: Evaluate pricing and output decisions across market structures, using strategic models to understand competition, monopoly power, and firm behavior.

No. of Hours:24

Module 4: General Equilibrium and Welfare Economics

Scope of Module:
Covers general equilibrium models, welfare economics, Edgeworth box, social welfare functions, ESG integration, and ethical frameworks like Rawls' theory**.**

Topics:
Partial and general equilibrium, General equilibrium theory in consumption and production, General equilibrium under uncertainty, Edgeworth box, Pareto improvement and efficiency, Walrasian equilibrium, Pigouvian welfare economics, Social welfare function, incorporating ESG in economic welfare

Learning Outcome: Apply advanced equilibrium and welfare concepts to evaluate policy outcomes, ethical trade-offs, and integrate ESG principles into economic decision-making frameworks.

No. of Hours:24

Module 5: Asymmetric Information

Scope of Module:
Applies information economics to tackle real-world issues like credit risk, insurance design, and employment contracts using signalling and incentive models.

Topics:
Moral hazard problem, adverse selection, principal agent problem, theory of lemon, credit market, implications of asymmetric information, market signalling, hidden information modelling, efficiency wage model, information and insurance, Efficient Market Hypothesis

Learning Outcome: Apply concepts of asymmetric information to analyze market failures, design incentives, and improve decision-making in finance, insurance, and contracts.

Module	No of Pre-Recordings
1	10
2	10
3	12
4	12
5	10

Note: Minimum number of pre-recordings is 10.

Pedagogy / Teaching Methodology:

- ✓ Blended learning
- ✓ Case based learning
- ✓ Quiz

Certificate / Value Added Courses Recommended (with Free Resource Links):

1. Microeconomics course by:

   https://onlinecourses.nptel.ac.in/noc22_mg13/preview

Suggested Readings:

- Varian, H.R. (2019): Microeconomic Analysis, third edition, first Indian edition, W W Norton & Company; 3rd edition
- Mas-Colell, A., Whinston, M.D., and Green J. (1995): Microeconomic theory, Oxford University Press
- Henderson, J. M., & Quandt R. E., (2003). Microeconomic Theory: A Mathematical Approach, New Delhi: McGraw-Hill.

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO/PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	3	2	2	-	-	-	-	3	2	-
CO2	2	-	3	2	2	-	-	2	3	-
CO3	2	2	2	3	2	-	-	3	-	2
CO4	2	2	-	3	3	2	-	2	2	3
CO5	2	3	2	-	2	3	2	-	3	2
Articulation	2.2	2.25	2.25	2.6	2.25	2.5	2	2.5	2.5	2.3

Note: The Articulation is indicative of how a particular course maps to a PO.

Articulation is calculated as:

$$= \frac{\text{Sum of CO Mapping Levels for a particular PO}}{\text{No.of COs that mapped to that PO}}$$

Example:1

$$Articulation\ of\ \boldsymbol{PO1} = \frac{(3+2+2+2+2)}{5} = 2.2$$

Example: 2

$$Articulation\ of\ \boldsymbol{PO7} = \frac{2}{1} = 2.0$$

Course Title	Advanced Macro Economics
Course Code	25VME3C102
Semester	**I**
Credits	**4**
Course Type	Core Course
Learning Hours	120
Live Sessions	**12 hours**

Course Description:

This course offers a comprehensive understanding of macroeconomic principles, including national income accounting, aggregate demand and supply, consumption and investment theories, and monetary-fiscal policy frameworks. It delves into money markets, unemployment, inflation dynamics, IS-LM modelling, and international economic interactions like balance of payments and exchange rate mechanisms. By integrating classical, Keynesian, and modern economic theories, the course equips learners with analytical skills to assess economic performance and policy impacts. Its relevance lies in its application to real-world economic decision-making, making it valuable for careers in finance, policy analysis, consulting, and strategic planning in both public and private sectors.

Course Outcomes (COs)

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Compare various theories of consumption and investment to explain their implications on economic policy formulation.	L4
CO2	Assess the effectiveness of monetary and fiscal policies in achieving macroeconomic stability.	L5
CO3	Examine the relationship between inflation and unemployment through macroeconomic theories	L4
CO4	Assess the impact of fiscal and monetary policies on economic equilibrium using IS-LM model	L5

CO5	Interpret balance of payments data and suggest sustainable trade policy recommendations to promote long-term external sector stability.	L5

Course Modules

No. of Hours:24

Module 1: Introduction to Macroeconomics
Scope of Module: Covers national income, AD-AS models, consumption-investment theories, aiding economic analysis and policy decisions in business and government sectors.
Topics: Circular flow of Economic Activity (Four sector model), Methods of calculating National Income –Value Added or Product method, Expenditure method, Income method, Aggregate Supply, Aggregate Demand- Equilibrium of AD- AS and adjustments for determining output, price and employment, consumption function - Life cycle hypothesis, Absolute income hypothesis, Permanent income hypothesis- Robert Hall and Random Walk - Lucas critique - Adaptive expectations, The marginal efficiency of investment - Investment demand and output growth-The accelerator principle and stabilization policy - Lags in investment demand Hypothesis
Learning Outcome: Analyze national income, consumption, and investment theories to evaluate macroeconomic equilibrium and support effective economic policy and business decisions.

No. of Hours:24

Module 2: Monetary and Fiscal Policy
Scope of Module: Explore money types, demand-supply theories, policy tools, and fiscal-monetary effectiveness using models like quantity theory and Ricardian equivalence.
Topics: Types of money, Money multiplier, Super Multiplier Demand for money- Classical, Keynesian and Monetarists arguments, Supply of money, Quantity theory of money, Liquidity trap, Monetary neutrality, Friedman and the Modern Quantity Theory, Liquidity preference and loanable funds theories of interest, instruments of monetary policy, Relative effectiveness of fiscal and monetary policies: policy lag, automatic Stabilizers; Balanced budget debate; Active or passive, Monetarists and Fiscalists -Tax rate changes and the budget deficit- Fiscal stimulus and stabilisation – Fiscal deficit and stabilisation – Crowding-out effect – Ricardian Equivalence Theorem
Learning Outcome: Evaluate money theories, policy tools, and fiscal-monetary impacts to analyze macroeconomic stability and guide effective financial decision-making.

No. of Hours:24

Module 3: Unemployment and Inflation
Scope of Module: Analyze unemployment, wage and price determination, inflation dynamics, and labor market behavior using the Phillips Curve and related models.
Topics: Unemployment, Wage determination- effect of prices, unemployment; Price determination, Flexible price- fixed money wage model, Labor demand and supply, Natural rate of Unemployment, Employment and output. Modern Theories of Unemployment Inflation, Expected Inflation, and Unemployment; Phillips curve, Natural rate of unemployment, high inflation and Phillips curve.
Learning Outcome: Analyze labor market dynamics, inflation, and unemployment theories to evaluate macroeconomic conditions and support employment and wage-related policy decisions.

No. of Hours:24

Module 4: IS-LM Model
Scope of Module: Covers IS-LM model construction, policy shifts, multiplier effects, and integrated fiscal-monetary strategies for analyzing macroeconomic equilibrium and policy
Topics: Money and goods market equilibrium: Construction of IS, LM functions; Fiscal Policy: shifters of IS curve, Government spending effect; Monetary Policy: shifters of LM curve, money supply effect; Policy mix; Monetary and Fiscal Policy Multipliers in the IS–LM Model
Learning Outcome: Construct and apply IS-LM models to evaluate fiscal and monetary policy impacts on macroeconomic equilibrium, output, and interest rates.

No. of Hours:24

Module 5: Open Macroeconomic Models
Scope of Module: Apply exchange rate theories, BoP analysis, and open economy models to design sustainable trade strategies and solve real-world macroeconomic issues.
Topics: Balance of Payments, Exchange Rate, Sustainable trade practices, equilibrium and disequilibrium of BoP; Balance of payment adjustment policy with fixed and flexible exchange rates, Factors influencing foreign exchange rate, Foreign Trade Multiplier, Short-run Open Economy: Mundell-Fleming Model; Purchasing Power Parity; Dornbusch's overshooting model.

Learning Outcome: Analyze balance of payments and exchange rate models to develop sustainable trade solutions and address macroeconomic challenges in an open economy.

Module	No of Pre-Recordings
1	12
2	12
3	10
4	10
5	10

Note: Minimum number of pre-recordings is 10.

Pedagogy / Teaching Methodology:

- ✓ Case Studies
- ✓ Interactive simulations
- ✓ Quiz

Certificate / Value Added Courses Recommended (with Free Resource Links):

1. Macroeconomic course: https://onlinecourses.nptel.ac.in/noc23_hs02/preview

Suggested Readings:

- Dornbusch, Fischer, Startz. (2010). Macroeconomics. 11th Edition, Tata Mc Graw Hill.
- H.L.Ahuja. (2012). Macroeconomics:Theory and Policy. 18th Revised Edition, Sultan Chand Publishers.
- N. Gregory Mankiw. (2012). Macroeconomics. 8th Edition, Worth Publishers
- D.N. Dwivedi. (2005). Macroeconomics: Theory and Policy. 2nd Edition, Tata Mc Graw Hill Education.
- Edward Shapiro. (2011). Macroeconomic Analysis. 5th Edition, Galgotia Publication Ltd.
- Ackley.G. (1978). Macroeconomics: Theory and Policy, Macmillan, NewYork.

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)

6	Indian Knowledge System

CO/PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	2	3	-	-	-	2	-	-
CO2	2	3	-	3	2	-	-	-	2	-
CO3	2	-	-	2	2	3	2	-	-	2
CO4	-	3	2	3	2	-	-	2	2	-
CO5	2	2	3	-	3	2	-	-	2	3
Articulation	2.25	2.5	2.33	2.75	2.25	2.5	2	2	2	2.5

Course Title	Mathematics for Economics
Course Code	25VME3C103
Semester	**I**
Credits	**4**
Course Type	Core Course
Learning Hours	120
Live Sessions	**12 hours**

Course Description:

This course provides a rigorous foundation in mathematical economics, emphasizing equilibrium analysis, optimization, matrix algebra, and dynamic economic modelling. It covers applications in market structures, tax and subsidy effects, input-output models, and profit maximization under various market forms. Students learn to apply calculus and linear programming techniques for solving real-world economic problems. Tools such as Lagrange multipliers, difference and differential equations, and the simplex method are explored in depth. The course is highly relevant in economic consulting, data analysis, policy modelling, and business strategy, equipping learners with analytical skills essential for evidence-based decision-making in competitive economic environments.

Course Outcomes (COs)

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Apply equilibrium analysis and matrix algebra techniques to solve economic equilibrium problems.	L3
CO2	Evaluate firm behavior in different market structures using optimization techniques**.**	L5
CO3	Determine optimal solutions under constraints in utility maximization and production theory	L5
CO4	Assess market stability using dynamic economic models.	L5
CO5	Solve linear programming problems using graphical and simplex methods.	L6

Course Modules

No. of Hours:24

Module 1: Mathematical Foundations & Economic Applications
Scope of Module: Covers market equilibrium, tax impacts, matrix algebra, and input-output models essential for economic analysis, planning, and policy formulation.
Topics: Mathematical functions, equations, set theory, Matrix algebra - Determinants - Inverse - Cramer's rule, Equilibrium analysis in Economics - Definition of equilibrium - Solution of equilibrium - Single vs. multiple equilibrium - Partial vs. general equilibrium; Change in market equilibrium due to specific and ad-valorem tax and subsidy, computation of dead-weight loss in market equilibrium; Application: single vs. multiple commodity markets; Linear Models and Quadratic Forms Applications: Input-Output Static Model using matrix algebra- determination of gross output, Simon-Hawkins Condition; Application of non-linear systems, IS-LM Model.
Learning Outcome: Apply equilibrium concepts and matrix algebra to analyze market changes, tax effects, and input-output models for economic decision-making.

No. of Hours:24

Module 2: Unconstrained Optimization
Scope of Module: Explore optimization techniques, concavity concepts, and marginal analysis using calculus to model firm behavior across various market structures and scenarios.
Topics: Concavity, Convexity, Quasiconcavity, Quasiconvexity Optimization of functions of one variable - Main concepts - First-order conditions - Second-order conditions (sufficient conditions) Applications: Profit maximization (one product) under: - perfect competition - derivation of firm's supply curve and industry (aggregate) supply curve under perfect competition-identical costs and non-identical costs; monopoly. – Monopolistic – Oligopoly (Collusive and Non-Collusive Oligopoly Models - Joint profit maximization under cartel; Cournot model, Stackelberg model) Optimization of functions of more than one variable - The differential version of optimization conditions - Extreme values of function of two variables and comparative static aspect of optimization Application: Profit maximization (two products) under perfect competition - extreme values of function of n variables.

Applications: i) Monopolist selling in segmented markets, Marginal Concepts-Relationship among Total, Marginal and Average Concepts
Learning Outcome: Analyze optimization techniques to determine firm behavior and profit maximization under different market structures using calculus-based models.

No. of Hours:24

Module 3: Constrained Optimization
Scope of Module: Develop constrained optimization skills using Lagrange multipliers, first and second order conditions, and apply to utility maximization and production functions.
Topics: Two variables, one constraint -Lagrange-multiplier method-First order conditions-Second order conditions, Hessian Border Condition; Applications: Utility maximization; Production Functions and Its applications
Learning Outcome: Apply Lagrange multiplier method and second-order conditions to solve constrained optimization problems in utility maximization and production function analysis.

No. of Hours:24

Module 4: Application Calculus
Scope of Module: Covers difference and differential equations, Samuelson model, and Cobweb model to analyze dynamic market behavior and price stability over time.
Topics: First-order linear difference equations - Second-order difference equations; Samuelson multiplier-acceleration interaction model; First-order differential equations - Second-order differential equations Application: Cobweb Market Model, Dynamic stability of Market price
Learning Outcome: Solve difference and differential equations to model dynamic economic systems and evaluate market stability using the Samuelson and Cobweb models.

No. of Hours:24

Module 5: Linear Programming
Scope of Module: Apply linear programming techniques, including graphical and simplex methods, to optimize resource allocation and solve real-world economic and business problems.

Topics: Introduction, Basic concepts of Linear Programming Problem, Formulation of Linear Programming Problem, Solutions of linear programming through Graphical method and Simplex method, duality.
Learning Outcome: Formulate and solve linear programming problems using graphical and simplex methods to optimize decisions in economic and business contexts.

Module	No of Pre-Recordings
1	12
2	12
3	10
4	10
5	10

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Basic knowledge of calculus
- Understanding of matrices and determinants

Pedagogy / Teaching Methodology:

- ✓ Problem solving workshop
- ✓ Case based learning
- ✓ Model building assignments

Certificate / Value Added Courses Recommended (with Free Resource Links):

- Mathematics for Economics: https://onlinecourses.nptel.ac.in/noc21_hs104/preview

Suggested Readings:

- Chiang A. C, Kevin Wainwright (2005), Fundamental Methods of Mathematical Economics, McGraw Hill, ND.
- Sydsaeter, K and Hammond, P., Mathematics for Economic Analysis, Pearson, Educational Asia, 4th Edition, 2002.
- Dowling, E. T., "Introduction to Mathematical Economics", McGraw-Hill, 3rd Edition, 2001.
- Simon, C. and L. Blume (2019), Mathematics for Economists, Viva-Norton, New Delhi

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO/PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	3	2	3	-	-	-	-	2	-	-
CO2	3	2	2	2	-	-	-	2	2	-
CO3	2	-	3	-	2	-	-	3	-	2
CO4	2	3	-	3	2	-	2	-	2	-
CO5	-	3	-	-	3	2	2	-	3	2
Articulation	2.5	2.5	2.6	2.5	2.3	2	2	2.3	2.3	2

Course Title	Indian Economy & Development Goals
Course Code	25VME3C104
Semester	**I**
Credits	**4**
Course Type	Discipline Specific Course
Learning Hours	120
Live Sessions	**12 hours**

Course Description:
This course offers a comprehensive exploration of the Indian economic landscape by examining its structural components in agriculture, industry, and services. It critically evaluates key economic reforms and development goals while analyzing policy initiatives and their impact on national growth. Students explore regional disparities, assessing strategies to address inequalities among states and foster equitable development. The course also covers India's trade policies and global economic engagements, highlighting the country's contributions to international development agendas. This course is essential for professionals in banking, finance, policymaking, and economic research. It equips learners with analytical skills to assess economic trends and policy impacts, aiding decision-making in corporate, government, and social sectors in India's evolving economic environment.

Course Outcomes (COs)

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Analyze the impact of economic reforms, fiscal reforms, financial sector changes, and trade policies on India's economic growth since 1991.	L4
CO2	Assess the growth, challenges, and policy measures in the agriculture, industrial, and services sectors, including initiatives like Atmanirbhar Bharat.	L5
CO3	Examine poverty trends, employment patterns, health and education policies, and their role in achieving Sustainable Development Goals.	L4
CO4	Interpret the role of economic planning, monetary policies, NITI Aayog, and international trade agreements in shaping India's economy.	L5

CO5	Evaluate the effectiveness of government welfare schemes, social security policies, and poverty alleviation programs in improving livelihoods.	L5

Course Modules

No. of Hours:24

Module 1: Introduction to Indian Economy
Scope of Module: Explores India's economic reforms, growth trends, fiscal policies, financial sector changes, and trade reforms, shaping industry dynamics.
Topics: Features of Indian Economy, Economic Planning in India, Five Year Plans, Planning commission v/s NITI Ayog, Transition of Economic Activity, Dadabhai Naoroji's Drain Theory, and colonial exploitation Performance of the economy since 1991, fiscal reforms, financial sector reforms and trade reforms.
Learning Outcome: Analyze India's economic reforms and policies to understand their impact on development.

No. of Hours:24

Module 2: Indian Economic Structure
Scope of Module: Explore sectoral growth, policy reforms and economic impact using policy evaluation
Topics: **Agriculture Sector:** Review of agricultural growth, land reforms, Green revolution, Public distribution system, storage management, issue of farmer suicides, agrarian distress-agricultural subsidies Recent schemes of Agriculture Sector **Industrial Sector:** Performance, problems and prospects; Capital formation, Regional imbalances, MSME's, Output and employment, labour reforms, Industrial growth, technology and innovation, Informal sector, Atmanirbhar Bharat Recent schemes of Industrial Sector **Service Sector:** The growth and dominance of services sector in India, Employment, labour productivity, ICT and economic growth, Recent schemes of Service Sector

Learning Outcome: Evaluate the growth, challenges, and policy measures in India's agriculture, industry, and services sectors, including reforms, employment, and innovation.

No. of Hours:24

Module 3: Social Development

Scope of Module:
Develop skills in poverty measurement, demographic analysis, policy evaluation, sustainability assessment, and human development index interpretation.

Topics:
Human development indicators: review of change since early fifties, measurement of poverty and inequality – extent of reduction in poverty – demographic transition, health services, health policy, education policy, employment and unemployment trends, environmental protection, Sustainable Development Goals

Learning Outcome: Analyze human development trends, poverty, inequality, demographic shifts, and policy impacts on health, education, employment, and environmental sustainability.

No. of Hours:24

Module 4: External Sector

Scope of Module:
Analyze Policy making process in India,fiscal management tools, banking regulations, trade policies, balance of payments assessment.

Topics:, Finance commission, Monetary policy in India, Indian banking sector, priority sector lending, fiscal policy, Public debt management and reforms, India's foreign trade value composition and direction, balance of payments, tariff policy, exchange rate, Trade agreements

Learning Outcome: Appraise economic planning, fiscal policies, monetary regulations, trade agreements, and financial reforms to assess their impact on India's economic development.

No. of Hours:24

Module 5: Development Policies

Scope of Module:

Apply economic and policy analysis to evaluate social security schemes, welfare programs, and poverty alleviation strategies for sustainable development solutions.
Topics: Social security measures in organized and unorganized sector, Pension, Health and medical insurance, disability benefits, Maternity benefits, Poverty alleviation schemes, MGNREGA, LPG distribution, Housing, Food Security Act
Learning Outcome: Evaluate social security measures, welfare programs, and policy impacts on poverty alleviation, employment, and inclusive economic development in India.

Module	No of Pre-Recordings
1	10
2	12
3	10
4	12
5	10

Note: Minimum number of pre-recordings is 10.

Pedagogy / Teaching Methodology

- ✓ Data driven analysis (RBI reports, economic survey, CSO Reports World bank/IMF report)
- ✓ Case based learning
- ✓ Quiz

Certificate/Value Added Course Recommended (with Free Resource Links):

1. Indian Economy: Some Contemporary Perspectives: https://onlinecourses.nptel.ac.in/noc22_hs69/preview

Suggested Readings:

- Uma Kapila, Indian Economy (2019), 20th Edition, Academic Foundation Publication
- Krueger A. (ed.), Economic Policy Reforms and the Indian Economy, Oxford University Press, 2003
- Arvind Panagariya (2004) India's Trade Reform, India Policy Forum, 2004
- Panagariya, Arvind, India the Emerging Giant, Oxford University Press, 2008
- Financial Stability Report, Reserve Bank of India, (various editions)

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global

2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	3	2	2	3	-	-	-	2	-	-
CO2	2	2	3	-	3	2	-	3	-	-
CO3	-	3	2	-	2	3	2	-	2	3
CO4	3	2	-	3	2	-	-	2	2	-
CO5	-	3	-	2	3	2	2	-	3	2
Articulation	2.6	2.4	2.3	2.3	2.5	2.3	2	2.3	2.3	2.5

Course Title	Economics in Technology & AI Integration
Course Code	25VME3C105
Semester	**I**
Credits	**2**
Course Type	Ability Enhancement Course
Learning Hours	**60**
Live Sessions	**12 hours**

Course Description:

Course explores the intersection of economics, artificial intelligence, and digital transformation. It covers fundamental economic principles in tech-driven markets, the impact of AI and automation on labor and decision-making, the rise of digital currencies, AI's role in financial markets, and regulatory frameworks for AI in economic systems. The course provides analytical skills to navigate AI-driven economies, digital finance, and regulatory challenges. Understanding these trends is vital for strategic decision-making, risk management, and fostering innovation in a rapidly evolving digital economy.

Course Outcomes (COs)

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Evaluate the influence of network effects, competition, and platform economics in tech-driven industries.	L5
CO2	Apply the implications of automation, big data, and ethical concerns on labor and policy-making.	L3
CO3	Examine the impact of digital currencies on financial inclusion and the economy	L4
CO4	Utilize AI and machine learning tools for forecasting.	L3
CO5	Assess the latest policies of the government to support AI for economic growth and development.	L5

Course Modules

No. of Hours:12

Module 1: Foundations of Economics in the Digital Age
Scope of Module: This module explores economic principles in digital markets, focusing on competition, platform economics, and network effects shaping tech-driven industries.
Topics: Fundamental economic principles in technology-driven economies- The role of supply and demand in digital markets- Market structures and competition in tech industries- Network effects and platform economics
Learning Outcome: Analyse key economic principles and how they apply to technology-driven markets, including digital competition and network effects.

No. of Hours:12

Module 2: AI and Automation in Economic Decision-Making
Scope of Module: Students will explore automation impacts, data-driven decisions, and predictive tools like regression and trend analysis used in economic and policy planning.
Topics: Introduction to technology in modern economies -Impact of automation on jobs, income, and productivity -Role of data in shaping business and government decisions -Use of simple predictive tools in economic planning -Regression analysis, Decision tree
Learning Outcome: Analyze how AI and automation influence economic decision-making, labour markets, and policy development

No. of Hours:12

Module 3: Digital Currencies and the Future of Monetary Systems
Scope of Module: Students will develop an understanding of block-chain economics, digital currency frameworks, fin-tech innovations, and regulatory techniques for managing risks in digital financial ecosystems.

Topics: The economics of cryptocurrencies and block-chain technology- Central bank digital currencies (CBDCs) and monetary policy- The role of fin-tech in financial inclusion- Risks and regulations of digital assets
Learning Outcome: Evaluate the economic implications of digital currencies, block-chain technology, and the evolving role of fin-tech in monetary systems.

No. of Hours:12

Module 4: Auction Theory in the Digital Age
Scope of Module: Advanced applications, Myerson's optimal auctions, real-time bidding, ad allocation algorithms and pricing strategies.
Topics: Auction Theory (Vickrey, Myerson Auctions), Case studies of auctions, advertising strategies on the internet
Learning Outcome: Analyze real-world auction cases, and explore strategic approaches in internet-based advertising and bidding.

No. of Hours:12

Module 5: Policy and Regulation of AI in Economic Systems
Scope of Module: Students will apply economic and policy analysis to evaluate AI regulations, balance innovation with stability, and address challenges in AI-driven financial and trade systems.
Topics: Government policies on AI and digital economies- Regulatory frameworks for AI in finance and trade- The balance between innovation and economic stability- Future trends in AI-driven economic governance
Learning Outcome: Analyze the role of policy and regulation in shaping AI-driven economic systems, balancing innovation with financial and social stability.

Module	No of Pre-Recordings
1	10
2	12
3	12
4	10
5	10

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Basic understanding of statistics (descriptive statistics, correlation, regression)

Pedagogy / Teaching Methodology

- ✓ Blended learning
- ✓ Case based learning
- ✓ Guest lectures

Certificate/Value Added Course Recommended (with Free Resource Links):

1. Artificial Intelligence for Economics: https://onlinecourses.nptel.ac.in/noc24_cs76/preview
2. The Economics of AI: https://www.coursera.org/learn/economics-of-ai

Suggested Readings:

- Calo, R., Froomkin, M., & Kerr, I. (2016). *Robot Law*. Edward Elgar Publishing.
- Zuboff, S. (2019). *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. PublicAffairs.
- López de Prado, M. (2018). *Advances in Financial Machine Learning*. Wiley.
- Das, S. (2019). *The Financial System and the Economy: Principles of Money and Banking*. Routledge
- Tapscott, D., & Tapscott, A. (2016). *Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business, and the World*. Portfolio/Penguin.

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	3	-	3	2	-	-	-	3	-	-
CO2	2	3	-	2	2	3	-	-	3	-
CO3	2	-	2	-	2	3	2	-	2	3
CO4	3	2	-	2	2	-	-	2	3	-
CO5	2	2	-	3	3	2	-	-	2	3
Articulation	2.4	2.3	2.5	2.25	2.25	2.6	2	2.5	2	3

Course Title:	Generative AI for Online Learners
Course Code:	25VMX0S105
Semester:	I
Credits:	2
Course Type	Skill Enhancement Course
Learning Hours	60
Live Sessions	12 hours

Course Description:

This postgraduate-level course provides an advanced engagement with Generative AI, mapped to the textbook *Generative AI for Online Learners*. Learners will gain deeper insights into AI applications for academic writing, research support, professional communication, and career development. Emphasis is placed on critical evaluation, ethical boundaries, and reflective practice to equip PG students to use AI tools with maturity and academic integrity.

Course Outcomes (COs)

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Explain advanced principles and implications of Generative AI for academic and professional contexts.	L2
CO2	Demonstrate effective prompting and iterative refinement for complex academic tasks.	L3
CO3	Apply AI for literature review, summarization, academic writing, and presentations.	L4
CO4	Critically evaluate risks, biases, and originality concerns in research with AI.	L5
CO5	Develop AI-enabled strategies for professional skills and career opportunities.	**L5**

Course Modules **No of Hours: 12**

Module 1: Generative AI Fundamentals
Scope: Introduces foundational concepts, debunks myths, and explores real-world applications with hands-on exposure.
Topics: Definitions, myths, applications, first hands-on
Learning Outcome: Learners will grasp core principles of generative AI and confidently navigate basic tools and use cases.

No of Hours: 12

Module 2: Prompting for Advanced Learners
Scope: Focuses on crafting nuanced prompts and evaluating AI-generated outputs for depth and accuracy.
Topics: Complex prompts, critique of AI outputs
Learning Outcome: Learners will develop advanced prompting skills and critically assess AI responses for reliability and bias..

No of Hours: 12

Module 3: Smart Academic Learning
Scope of Module: A Applies AI to academic tasks like summarizing research, analyzing arguments, and enhancing active learning.
Topics: Summarization of research articles, critical analysis, active learning.
Learning Outcome: Learners will use AI to streamline academic workflows and strengthen critical thinking in scholarly contexts.

No of Hours: 12

Module 4: Ethics and Originality
Scope: Explores ethical dilemmas, bias in AI, citation norms, and reflective practices in academic integrity.
Topics: Advanced ethical issues, bias, citation practices, reflective learning.
Learning Outcome: Learners will internalize ethical standards and apply responsible AI use in academic and professional settings.

No of Hours: 12

Module 5: AI for Research and Careers
Scope: Equips learners with AI tools for research dissemination, productivity enhancement, and career readiness
Topics: Research communication, productivity workflows, career readiness
Learning Outcome: Learners will integrate AI into research communication and build scalable workflows for academic and career growth

Prerequisites (If Any):

- Basic digital literacy and familiarity with online learning platforms.
- Interest in technology-assisted learning and productivity tools.

Pedagogy / Teaching Methodology:

✓ Interactive Live Sessions
✓ Guided AI Tool Demos and Hands-on Activities
✓ Weekly Reflective Journals
✓ Assignments, Use Cases, and Peer Discussions
✓ Final Mini Project / Capstone Task

Certificate / Value Added Courses Recommended (Free Resources):

1. NPTEL: Introduction to Artificial Intelligence: Coursera: Prompt Engineering for ChatGPT
2. Google AI: Introduction to Responsible AI: OpenAI Learning Resources

Suggested Readings:

Melanie Mitchell, *Artificial Intelligence: A Guide for Thinking Humans*

Ethan Mollick & Lilach Mollick, *Practical Guide to Using AI in Education*

Online blogs and documentation: OpenAI, Anthropic (Claude), Gemini (Google)

Research articles on AI ethics and generative AI applications

Recommended Tools/Software (If Applicable):

1. ChatGPT (OpenAI)
2. Claude (Anthropic)
3. Gemini (Google)
4. Online journal platforms (Notion, Google Docs)
5. Visualization Tools (Canva, Mindmaps, etc.)

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

CO\PO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	2	2	2	-	-	2	2	2
CO2	3	3	3	-	2	2	-	2	3	3
CO3	3	3	3	1	2	2	1	3	3	3
CO4	2	2	2	3	2	2	1	2	2	2
CO5	2	3	2	3	3	2	2	2	2	2
Articulation	2.8	2.8	2.4	2.2	2.2	2	1.2	2.2	2.4	2.4

Semester: II

Course Title:	**History of Economic Thought**
Course Code:	**25VME3C201**
Semester:	**II**
Credits:	**4**
Course Type	**Core Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description:

This course offers a comprehensive exploration of the evolution of economic thought, from ancient philosophies to modern and emerging theoriesl. It critically examines economic discourse and contemporary global developments. By connecting historical perspectives with present-day economic challenges, the course equips students with analytical tools and contextual understanding essential for policy analysis, research, and roles in academia, government, and industry.

Course Outcomes (COs)

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Appraise the historical development and evolution of economic thought and context.	L5
CO2	Analyze the contributions of various economic theories and schools of thought to contemporary economic debates and policy frameworks, considering their strengths, weaknesses, and implications	L4

CO3	Apply economic theories and concepts to analyze and interpret historical and contemporary economic phenomena	L3
CO4	Synthesize interdisciplinary perspectives and emerging trends in economic thought, to critically evaluate their implications for economic analysis and policy formulation	L6
CO5	Critically assess the role of economic thought in addressing global challenges and shaping future economic policies, considering ethical, social, and environmental dimensions, and propose innovative solutions informed by interdisciplinary insights and theoretical frameworks.	L6

Course Modules

No. of Hours:24

Module 1: **Foundations of Economic Thought**
Scope of Module: Explores the origins and evolution of economic ideas from ancient philosophies to classical and neoclassical theories that laid the groundwork for modern economics.
Topics: **Introduction and Nature of History of Economic Thought**-The Origins of Economic-Thought: Medieval Economic Thought: Greek philosophy; ancient Indian economic thought, physiocracy. Mercantilism: A Foundational Era in Economic Thought. Origins and Context of Mercantilism: Key Principles of Mercantilism: Mercantilism and Trade Policies: Mercantilist Views on Colonies and Imperialism: Critiques and Legacy of Mercantilism. Classical and Neoclassical Economic Thought-Classical Economics and the Wealth of Nations: Chanakya's Arthashastra Ricardo's Theory of Comparative Advantage; Malthusian Theory of Population: Transition to Neoclassical Economics; Marginalism and Utility Theory; Alfred Marshall and Neoclassical Synthesis.
Learning Outcome: Students will be able to explain the historical origins and evolution of early economic thought and assess its foundational contributions to modern economics.

No. of Hours:24

Module 2: **Theories of Growth and Development**

Scope of Module:
Examines comprehensive and partial theories explaining economic growth and development, including Marxist, Schumpeterian, and marginalist frameworks.

Topics:
Grand Theories of Economic Growth and Development- Karl Marx: Growth and Decay of Capitalism; Theory of Social Change, Surplus Value Theory, Reserve Army and Materialistic Interpretation of History; Schumpeter's Theory of Capitalistic Development, Crisis in Capitalism, Innovation, Degeneration of Capitalism. **Partial Theories of Economic Growth and Development-** Vicious Circle of Poverty; Theory of Circular Cumulative Causation; Lewis Model; Big-push and Critical Minimum Effort Thesis; Balanced and Unbalanced Growth Theories; Two-Sector Model of Uzawa; Endogenous Growth Model of Romer. **The Marginalists-** Jevons' Logical Calculus; Menger and the Austrian School; Bentham's Utilitarianism; Walras' Articulation of the Economic Sciences; Pareto's Welfare Economics.

Learning Outcome:
Students will be able to analyze comprehensive and partial theories of economic growth and evaluate the development of marginalist perspectives in shaping economic policy.

No. of Hours:24

Module 3: Competing Systems and National Thought

Scope of Module:
Analyzes alternative economic systems such as socialism and Keynesianism, along with the unique trajectory of Indian economic thought.

Topics:
Socialist Economic Thought- Marxist Economics; Socialist Planning and Command Economies; Socialist Views on Ownership and Distribution; Varieties of Socialist Thought; Critiques of Socialist Economics; Contemporary Debates and Comparative Perspectives. **Keynesian Economic Thought-**Context and Background of Keynesian Economics; Keynes's General Theory of Employment, Interest, and Money; Aggregate Demand Management; Liquidity Preference and Interest Rates; The Consumption Function and Multiplier Effect; Keynesian Policy Debates and Controversies; Post-Keynesian and New Keynesian Economics. **Indian Economic Thought-**Economic Ideas in Colonial India; Gandhian Economics; Post-Independence Economic Thought; Contemporary Issues and Perspectives; Comparative Perspectives and Global Relevance.

Learning Outcome:
Students will be able to compare different economic systems and understand the evolution of national and ideological schools of thought, including India's economic discourse.

No. of Hours:24

Module 4: Post-War Economic Thought and Policy Shifts

Scope of Module: Focuses on the transformation of economic theory after World War II, incorporating monetarism, rational expectations, and the impact of digital technologies.
Topics: **Post-World War II Economic Developments-**Study of Post-War Economic Theories and Policy Debates; Growth Theory; Development Economics; Welfare Economics; Contributions of Arthur Lewis, Gunnar Myrdal, and Amartya Sen. **Monetarism and Rational Expectations-**Monetarist Theories of Inflation, Money Supply, and Monetary Policy; Rational Expectations Theory and Its Implications for Macroeconomic Policy; Critiques of Keynesianism and Rise of New Classical Economics. **Economics in the Digital Age-**The Digital Economy and Its Implications for Markets, Labor, and Competition; Technological Innovation and the Rise of Platform Capitalism; Challenges and Opportunities in Regulating the Digital Economy and Protecting Consumer Rights.
Learning Outcome: Students will be able to evaluate major post-war economic shifts and policy debates, including the influence of digital transformation on economic theory and markets.

No. of Hours:24

Module 5: Global Perspectives and Emerging Trends
Scope of Module: Engages with contemporary and emerging trends in economic thought, including globalization, behavioral economics, and interdisciplinary approaches.
Topics: **Globalization and Economic Thought-**Economic Theories on Globalization, International Trade, and Financial Integration; Debates on Income Inequality and Global Governance; Contemporary Issues in International Economics. **Emerging Trends in Economic Thought-**Complexity Economics; Behavioural Economics; Digital Economy; Interdisciplinary Approaches to Economic Analysis; Reflections on the Future of Economic Thought. **Future Directions in Economic Thought-**Nudge Theory by Richard Thaler and Cass Sunstein; Prospect Theory by Daniel Kahneman and Amos Tversky; Social Norms and Influence (Cialdini and Bicchieri); Time Inconsistency and Hyperbolic Discounting by David Laibson and Richard Thaler.
Learning Outcome: Students will be able to critically examine global economic transformations and assess how emerging and behavioural trends shape contemporary and future economic thinking.

Module	No of Pre-Recordings
1	10
2	12
3	12
4	10
5	10

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Basic understanding of International business history

Pedagogy / Teaching Methodology:

- ✓ Conceptual and problem-based learning
- ✓ Interactive class exercises and proofs
- ✓ Real-world applications and modelling
- ✓ Assignments and quizzes using math software

Suggested Readings:

Books:

- Schumpeter, J.A. – History of Economic Analysis, Oxford University Press, 1954.
- Blaug, M. – Economic Theory in Retrospect, Cambridge University Press, 1996.
- Backhouse, R. – The Penguin History of Economics, Penguin Books, 2002.
- Screpanti, E., & Zamagni, S. – An Outline of the History of Economic Thought, Oxford University Press, 2005.
- Stiglitz, J.E. – Globalization and Its Discontents, W.W. Norton & Company, 2002.

Online Articles, Journals, and Whitepapers

- Journal of Economic Perspectives – American Economic Association
- Economic History Review – Wiley Online Library
- Quarterly Journal of Economics – Oxford University Press

Web-based Resources

- VOXEU (CEPR Policy Portal) – https://voxeu.org/
- World Economic Forum – https://www.weforum.org/
- MIT OpenCourseWare (Economics) – https://ocw.mit.edu/courses/economics/

Recommended Software/Tools: (If applicable)

- Zotero/Mendeley – For organizing and managing references, citations, and research papers.

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	3	2	2	2	-	-	-	2	-	-
CO2	2	3	2	3	-	-	-	-	3	-
CO3	3	-	2	-	2	2	-	2	-	2
CO4	2	3	-	2	2	-	2	-	2	3
CO5	-	3	-	2	2	3	2	-	2	3
Articulation	2.5	2.7	3	2.2	2	2.5	2	2	2.3	2.6

- Google Scholar – To access historical and contemporary research articles on economic thought.
- JSTOR & Project MUSE – Digital libraries for historical economic writings and academic papers.

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

Course Title:	**Statistics for Economics**
Course Code:	**25VME3C202**
Semester:	**II**
Credits:	**4**
Course Type	**Core Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description: This course offers a comprehensive foundation in statistical methods essential for data-driven decision-making across industries. It covers descriptive statistics, probability theory, distributions, sampling methods, estimation, and hypothesis testing. Students will learn to analyze data using measures of central tendency, dispersion, correlation, and regression. They will apply probability distributions, conduct sampling, estimate population parameters, and test hypotheses using various statistical tools. The course emphasizes conceptual clarity and practical application, equipping learners with analytical skills vital for roles in economics and research. Industry relevance lies in its utility for evidence-based policy, forecasting, quality control, and data science initiatives.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

	Course Outcome	BTL
CO1	Explain statistical measures for describing data.	L5
CO2	Apply Probability principles and distributions in data analysis	L3
CO3	Analyze sampling techniques and sampling distributions.	L4
CO4	Estimate population parameters using appropriate statistical methods.	L5
CO5	Formulate statistical hypotheses for informed decision-making.	L6

Course Module

No. of Hours:24

Module 1: **Introduction to Statistics**
Scope of Module: Covers key statistical measures for data analysis, supporting informed decisions in economics, finance, research, quality control, and business analytics.
Topics: Measures of Central Tendency and Dispersion, ie., mean, median, mode, harmonic mean, geometric mean, percentiles, quartiles; Measures of Variability: Range, Standard deviation, variance; Measures of Skewness and Kurtosis Pearson, coefficient of variation, co-variance and Correlation, regression
Learning Outcome: Students will compute, interpret, and analyze central tendency, dispersion, skewness, and correlation to derive insights from real-world data.

No. of Hours:34

Module 2: **Probability Theory and Distribution**
Scope of Module: Students will explore probability concepts, distributions, and Bayes' theorem using probability functions, random variables, and statistical modeling techniques.

Topics: Concept of probability, conditional probability and Bayes' theorem; Density and distribution functions, joint, marginal and conditional distribution, Central Limit theorem, Discrete versus continuous distribution, uniform, binomial, negative binomial, Poisson, geometric and hyper-geometric, exponential, normal, log-normal and gamma; functions of random variables.

Learning Outcome: Students will apply probability rules and distribution models to evaluate uncertainty, analyze data patterns, and solve real-world statistical problems.

No. of Hours:24

Module 3: **Sampling Methods and Sampling distributions**

Scope of Module:
Students will develop techniques in sampling methods, sample size determination, and distribution-based inference using t, Chi-square, and F-distributions.

Topics: Simple random sampling: with and without replacement, stratified random sampling, probability and non-probability sampling, statistic and sample moments, sampling distributions: Student's-t, Chi-square and F-distribution, determinants of sample size, law of large numbers and Central Limit theorem.

Learning Outcome: Students will design sampling strategies, compute sample statistics, and interpret sampling distributions for valid inference using statistical theorems and tests.

No. of Hours:24

Module 4: **Estimation**

Scope of Module:
Covers advanced estimation techniques using MLE, method of moments, interval estimation, and best practices for identifying and evaluating efficient, unbiased estimators.

Topics: Point estimation of population mean for large sample and small sample, estimation of population proportion and population variance, Maximum likelihood and method of moment estimation, properties of good estimators: unbiasedness, consistency, efficiency, sufficiency, Interval estimation.

Learning Outcome: Students will apply point and interval estimation methods, evaluate estimator properties, and select appropriate techniques for accurate population parameter estimation.

No. of Hours:24

***Module 5*: Hypothesis Testing**
Scope of Module: Integrates prior statistical knowledge to design hypothesis tests, minimize errors, and solve real-world problems using advanced inferential techniques and decision-making tools.
Topics: Statistical hypothesis, simple versus composite hypothesis, critical region, types and size of error – type-I and type-II error, power of a test, p-value, Hypothesis test about: a population mean, population proportions, difference between two population means, difference between two proportions, a population variance, the ratio of two population variances, Tests of goodness of fit, the analysis of contingency tables (Chi-square test for testing independence of two-classification criteria), test for correlation, Rao-Blackwell Theorem, Cramer-Rao Identity
Learning Outcome: Students will design and conduct hypothesis tests, interpret results, and apply statistical inference to make data-driven decisions in real-world contexts.

Module	No of Pre-Recordings
1	10
2	12
3	10
4	10
5	12

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Basic understanding of descriptive statistics

Pedagogy / Teaching Methodology

- ✓ Problem solving
- ✓ Case based learning
- ✓ Quiz

Certificate / Value Added Courses Recommended (with Free Resource Links):

1. https://onlinecourses.nptel.ac.in/noc22_mg87/preview

Suggested Readings:

Books:

- Hogg, R. and A. Craig, J., Introduction to Mathematical Statistics, McGraw-Hill, 1965.
- Miller, I. and M. Miller, Mathematical Statistics, sixth edition, Prentice Hall International,1999.
- Ramachandran, K. M and C. P. Tsokos, Mathematical Statistics with Applications, 2009
- Monga,G.S.(1972), Mathematics and Statistics for Economists,Vikas Publications, New Delhi.
- Speigal. M.R.(1992), Theory and Problems of Statistics, McGraw Hill, London

Recommended Software/Tools

- Stata / R / SPSS
- NVivo – for qualitative data analysis

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	2		3					2	3	
CO2	3		2		2	2		3		
CO3		3	2	2	2	2	2		3	
CO4		2		3	2	2		3	3	2
CO5	2		3	2	2	3	3			2

Articulation	**2.3**	**2.5**	**3.3**	**2.3**	**2**	**2.2**	**2.5**	**2.6**	**3**	**2**

Course Title:	**Financial Economics & AI in Market Analysis**
Course Code:	**25VME3C203**
Semester:	**II**
Credits:	**4**
Course Type	**Skill Enhancement Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description:

This course provides a comprehensive overview of financial economics, focusing on the relationship between risk, return, and market efficiency. It integrates traditional investment theories with modern AI and machine learning applications for market analysis and risk management. Through case studies and real-world data, students will evaluate the economic impact of AI-driven financial strategies.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Examine the foundational concepts of financial economics, including risk, return, and market efficiency, to support informed financial decision-making.	L4
CO2	Apply Modern Portfolio Theory and the Capital Asset Pricing Model (CAPM) to evaluate investment opportunities and optimize portfolio performance.	L3
CO3	Utilize AI and machine learning tools to analyze financial markets and develop predictive models for trend forecasting and strategy development.	L6
CO4	Implement quantitative and AI-based techniques to assess, manage, and mitigate financial risks in dynamic market environments.	L5
CO5	Critically assess the economic and regulatory implications of AI-driven financial strategies through real-world case studies and empirical data analysis.	L5

Course Modules

No. of Hours:24

Module 1: **Foundations of Financial Economics**
Scope of Module: Explores the fundamental principles of risk, return, market efficiency, and key financial instruments.
Topics: Introduction to Financial Economics-Definition, scope, and significance-Differences between financial economics and traditional economics. Risk and Return-Types of risk: systematic vs. unsystematic- Measuring risk: variance, standard deviation, beta- Expected return and required return. Market Efficiency-Forms of market efficiency (weak, semi-strong, strong)-Implications for investors and financial analysts- Empirical evidence and anomalies. Financial Instruments Overview- Equities (stocks): types, valuation basics-Debt instruments (bonds): types, interest rate sensitivity, duration- Derivatives: forwards, futures, options, and swaps. Time Value of Money- Present and future value- Discounting and compounding- Annuities and perpetuities
Learning Outcome: Examine the relationship between risk and return and the role of market efficiency in financial decision-making.

No. of Hours:24

Module 2: **Investment Analysis and Portfolio Management**
Scope of Module: Focuses on optimizing investment decisions using Modern Portfolio Theory and CAPM for risk-return assessment.

Topics:

Modern Portfolio Theory (MPT)-Risk-return trade-off-Efficient frontier and optimal portfolios-Role of diversification. Capital Asset Pricing Model (CAPM)-Assumptions and mathematical formulation-Security Market Line (SML) and pricing implications-Alpha and beta in portfolio performance. Portfolio Diversification Techniques-Correlation and covariance-Diversifiable vs. non-diversifiable risk-Global and sectoral diversification. Risk Management Tools-Value at Risk (VaR)-Stress testing and scenario analysis-Hedging using derivatives

Learning Outcome:

Analyse the principles of Modern Portfolio Theory and CAPM to assess risk-return relationships and optimize portfolio performance.

No. of Hours:24

***Module 3:* AI and Machine Learning in Market Analysis**

Scope of Module:

Introduces AI and machine learning techniques to forecast market trends and support data-driven trading.

Topics:

Introduction to AI in Finance-Role of AI in modern financial markets-Overview of machine learning techniques: supervised, unsupervised, reinforcement learning. Financial Data Processing-Sources of financial data: prices, news, sentiment-Data cleaning, feature engineering, and dimensionality reduction. Predictive Modeling-Regression models for trend forecasting-Classification for signal detection (buy/sell)-Model evaluation: accuracy, precision, recall, AUC. Algorithmic and Quantitative Trading-Basics of trading strategies-Backtesting and optimization-Introduction to trading bots and execution algorithms

Learning Outcome:

Analyse the principles of Modern Portfolio Theory and CAPM to assess risk-return relationships and optimize portfolio performance.

No. of Hours:24

***Module 4:* Financial Risk Management with AI**

Scope of Module:

Applies quantitative and AI-based tools to assess, predict, and mitigate financial risks effectively.

Topics:

Quantitative Techniques for Risk Assessment-Statistical models: Credit risk models: logistic regression, credit scoring. AI-Based Risk Prediction- Neural networks for volatility estimation- Decision trees and ensemble methods (e.g., random forests). Stress Testing with AI Models-Identifying stress scenarios using unsupervised learning-Integrating macroeconomic indicators. AI in Real-Time Risk Monitoring-Natural Language Processing (NLP) for sentiment and event risk- Real-time dashboards and alerts

Learning Outcome:

Apply statistical and mathematical models to assess financial risks, optimize decision-making, and enhance risk management strategies.

No. of Hours:24

***Module 5:* Case Studies in Financial Economics**
Scope of Module: Examines real-world applications of AI in financial markets and evaluates their broader economic and regulatory impacts.
Topics: AI in Equity and Derivatives Markets-Case studies of AI applications in trading (e.g., Renaissance Technologies)-Sentiment analysis in options pricing. Macroeconomic and Regulatory Impact-Impact of AI on market efficiency and volatility-Implications for regulation and policy. AI and Systemic Risk-Flash crashes and the role of algorithms-Central bank and institutional use of AI. Evaluation of AI Strategies-Profitability vs. stability-Human-in-the-loop vs. fully automated systems
Learning Outcome: Assess the broader economic implications of AI-driven financial strategies, including market efficiency, risk management, and regulatory challenges.

Module	No of Pre-Recordings
1	12
2	10
3	12
4	10
5	10

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Basic understanding of descriptive statistics, probability distribution and hypothesis testing
- Awareness of financial markets operation

Pedagogy / Teaching Methodology:

- ✓ Conceptual and problem-based learning
- ✓ Interactive class exercises and proofs
- ✓ Real-world applications and modelling
- ✓ Assignments and quizzes using math software.

Suggested Readings:

Books:

- López de Prado, M. (2018). *Advances in Financial Machine Learning*. Wiley.

- Campbell, J. Y., Lo, A. W., & MacKinlay, A. C. (1997). *The Econometrics of Financial Markets*. Princeton University Press.
- Shreve, S. E. (2004). *Stochastic Calculus for Finance I & II*. Springer.
- Tsay, R. S. (2010). *Analysis of Financial Time Series* (3rd ed.). Wiley.
- Agrawal, A., Gans, J., & Goldfarb, A. (2018). *Prediction Machines: The Simple Economics of Artificial Intelligence*. Harvard Business Review Press.
- CFA Institute – *Quantitative Investment Analysis*

Online Articles, Journals, and Whitepapers:

- Artificial Intelligence in Finance: The New Frontier, MIT Sloan Management Review
- AI and the Future of Financial Markets, World Economic Forum Whitepaper
- McKinsey & Company Reports on AI in Financial Services
- IMF Working Papers on AI, risk, and financial market dynamics

Recommended Software/Tools:

- Microsoft Excel / Google Sheets
  Widely used for financial calculations, modeling, portfolio analysis, and visualization.
- Python (with libraries like Pandas, NumPy, Matplotlib, Scikit-learn, yfinance, statsmodels)
  Essential for data analysis, financial modeling, and machine learning applications.
- R (with Quantmod, PerformanceAnalytics, rugarch, Tidyverse)
  Powerful for statistical computing, time series analysis, and risk modeling.
- Jupyter Notebooks / Google Colab
  Interactive coding environments ideal for prototyping and sharing financial models.

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	3	-	3	2	-	-	-	2	-	-
CO2	2	2	3	-	2	-	-	3	-	-
CO3	2	-	2	-	2	-	2	-	3	2
CO4	2	3	-	2	3	-	-	-	2	3
CO5	-	3	-	2	2	3	2	-	2	3
Articulation	2.2	2.6	2.6	2	2.2	3	2	2.5	2.3	2.6

Course Title:	**Development Economics**
Course Code:	**25VME3C204**
Semester:	**II**
Credits:	**4**
Course Type	**Discipline Specific Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description:

This course examines key concepts, theories, and policies related to economic growth and development. It covers issues such as poverty, capital formation, trade, and sustainability. Emphasis is placed on both classical and modern approaches to development. The course is relevant for careers in policy-making, development planning, and global economic research.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Assess the concepts related to the economics of growth and development.	L5

CO2	Analyze the importance, and applications of classical, neo-classical, and the trade theories in the economic development of different countries.	L4
CO3	Evaluate the need and importance of capital and human capital formation and the sectoral growth and the application of the macro-economic policies in different countries.	L5
CO4	Explain the implications of international trade and international trade organizations and monetary organizations.	L2
CO5	Analyze the concept of Sustainable Development (SD), integrating its environmental, social, and economic dimensions.	L4

Course Modules

No. of Hours:24

Module 1: **Foundations of Economic Growth and Development**
Scope of Module: This module covers essential concepts of economic development and poverty, alongside classical frameworks explaining growth.
Topics: Meaning and definitions of economic growth and development; factors affecting economic growth; measurement of economic growth and development; ethics and economic development; sustainable development; causes to study development economics. Kuznets' hypothesis; poverty and its measurement; poverty alleviation measures; convergence and divergence in economic theories; causes, consequences and measures to reduce development gap. Classical theories of development including Adam Smith's, David Ricardo's, Malthus's and Marx's theories; Schumpeter's theory of innovation; Rostow's take-off theory.
Learning Outcome: Explain the foundational concepts of development economics, poverty and classical development theories.

No. of Hours:24

Module 2: **Theories and Determinants of Economic Growth**

Scope of Module:
This module focuses on theoretical and practical aspects of capital and human resource development in growth economics.

Topics:
Neo-classical growth models: Harrod-Domar, Solow, Meade, Joan Robinson; endogenous growth models; balanced and unbalanced growth strategies. Capital formation: meaning, importance, causes for low capital formation, sources of savings and capital formation. Human capital formation: importance, problems, investment criteria, and strategies for manpower planning.

Learning Outcome: Evaluate the theoretical models and key drivers of economic growth and capital formation

No. of Hours:24

Module 3: **Sectoral and Social Dimensions of Development**

Scope of Module:
This module integrates sectoral development (agriculture and industry), social welfare, and macroeconomic policy for holistic development.

Topics:
Efficiency and productivity in agriculture; sustainable agriculture; globalization and agriculture; agricultural development policies; rationale of industrialization; terms of trade between agriculture and industry; industrial development policies. Food security, health, education, and nutrition; theory of demographic transition; infrastructure development issues and policies; role of ICT. Role of monetary and fiscal policies in developing countries.

Learning Outcome: Assess the link between sectoral performance, infrastructure, and macroeconomic policies in development.

No. of Hours:24

Module 4: **Trade and Macroeconomic Strategies for Development**

Scope of Module:
This module provides a broad understanding of trade, investment, inflation, and resource strategies for sustainable development.

Topics:
Inflation and development; internal and external resource mobilization; foreign direct investment; multinational corporations and their impact on developing countries.
Impact of international trade on development and gains from trade. Theories of international trade; free trade versus protectionism; export-led growth strategies

Learning Outcome: Analyze trade-related strategies and macroeconomic mechanisms driving economic development.

No. of Hours:24

Module 5: **Integration and Sustainability**
Scope of Module: This module highlights the global and institutional context of development, focusing on integration and long-term sustainability.
Topics: Economic integration: needs, benefits, and measures to enhance integration among developing nations. Sustainable development: Sustainable Development goals and Inclusive Growth environmental, social, and economic dimensions; intergenerational equity; strategic options for sustainability and policy frameworks.
Learning Outcome: Evaluate the role of international organizations, regional cooperation, and sustainability in shaping development.

Module	No of Pre-Recordings
1	12
2	10
3	10
4	10
5	12

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Basic understanding of Micro and Macro Economics

Pedagogy / Teaching Methodology

- ✓ Expert talks
- ✓ Policy simulation activity
- ✓ Quiz

Certificate/Value Added Course:

1. Economic Growth and Development: https://onlinecourses.nptel.ac.in/noc22_hs16/preview

Suggested Readings:

Books:

- Thirlwall, A.P. (2011). *Economics of Development: Theory and Evidence*. Palgrave Macmillan.
- Todaro, M.P. & Smith, S.C. (2020). *Economic Development*. Pearson Education.
- Meier, G.M. & Rauch, J.E. (2005). *Leading Issues in Economic Development*. Oxford University Press.
- Ray, D. (1998). *Development Economics*. Princeton University Press.
- Sen, A. (1999). *Development as Freedom*. Oxford University Press.

Online Articles, Journals, and Whitepapers:

- World Bank Development Reports (https://www.worldbank.org)
- UNDP Human Development Reports (https://hdr.undp.org)
- IMF Working Papers and Policy Papers (https://www.imf.org)
- Journal of Economic Growth (Springer)

Web-based Resources:

- World Bank Data (https://data.worldbank.org)
- International Monetary Fund eLibrary (https://www.elibrary.imf.org)
- UN Sustainable Development Goals Knowledge Platform (https://sdgs.un.org)

Recommended Software/Tools:

- Stata / R / Python – For empirical data analysis and modeling in development economics.
- Microsoft Excel – For statistical tabulation, analysis, and policy simulation.
- Tableau / Power BI – For visualizing development trends and macroeconomic indicators.
- Google Scholar – For accessing academic articles and citations.

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3

CO1	3	2	2	-	-	-	-	3	-	-
CO2	2	3	3	-	-	-	-	2	-	-
CO3	2	2	-	3	3	-	-	-	3	-
CO4	-	3	-	2	3	2	-	2	2	-
CO5	-	2	-	-	2	3	3	-	2	3
Articulation	2.3	2.4	2.5	2.5	2.6	2.5	3	2.3	2.3	3

Course Title:	**Economic models and Emerging Trends**
Course Code:	**25VME3C205**
Semester:	**II**
Credits:	**4**
Course Type	**Ability Enhancement Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description:

This course provides an accessible and application-oriented introduction to economic modelling and contemporary global economic trends. Students will examine key economic disruptions such as technological change, globalization, and climate challenges, and consider how digital innovation is reshaping markets, labor, and policy frameworks. Through real-world examples and case discussions, learners will gain a broad understanding of how modern economies function and evolve, without delving into complex mathematical or statistical methods. The course emphasizes critical thinking, economic reasoning, and ethical perspectives in the context of rapidly changing economic environments.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Apply foundational and advanced economic modelling techniques to interpret and predict economic behaviours and policy outcomes.	L3
CO2	Assess emerging global economic trends, disruptions, and their implications for economies and societies.	L5
CO3	Evaluate the impact of innovation, digital technologies, and changing market structures on economic behavior and decision-making.	L5
CO4	Examine how governments and institutions design and adapt policies to address contemporary economic challenges.	L4
CO5	Develop a critical perspective on the ethical, social, and governance dimensions of modern economic systems shaped by technology and globalization.	L5

Course Module

No. of Hours:24

Module 1: Foundations of Economic Modelling and Methodologies
Scope of Module: Introduces the purpose, structure, and relevance of economic models in understanding real-world economic issues.
Topics: Introduction to economic modelling- Concepts of economic models Types of models: theoretical- e.g., supply and demand, utility maximization practical- e.g., inflation forecasting, cost-benefit analysis simulation- e.g., agent-based models, disaster response models- Why do economists use models-Examples from real-life economic decisions (e.g., household budgeting, pricing policies)-Importance of assumptions and limitations in models
Learning Outcome: Understand what economic models are and how they are used to explain and guide economic decisions.

No. of Hours:24

Module 2: **Technology, Automation, and Economic Decision-Making**
Scope of Module: Explores how modern technologies influence decisions made by people, firms, and governments.
Topics**:** The role of technology in today's economies-Impact of automation on jobs and wages-Examples of how digital tools help in economic planning-Real-world uses of AI in public services and business-Ethical questions in technology-based decisions-Policies for managing technology-related changes in work and society.
Learning Outcome: Understand how new technologies influence economic decisions and affect jobs, productivity, and daily life.

No. of Hours:24

Module 3: **Emerging Global Economic Trends and Disruptions**
Scope of Module: Equips learners to interpret and respond to fast-changing global economic dynamics.
Topics**:** Trends in globalization and de-globalization- Shifts in global trade patterns and their causes-Technological disruption: automation, remote work, industry 4.0-Climate economics: carbon pricing. Geopolitical risks: sanctions, war, pandemics, and their economic effects-Case studies: e.g., post-COVID global economy, Ukraine-Russia conflict
Learning Outcome: Analyze global economic shifts, disruptions, and their implications for policy and business strategy.

No. of Hours:24

Module 4:**Innovation, Digital Economy, and Market Evolution**
Scope of Module: Prepares students to assess how innovation and digitization transform economic systems and markets.

***Topics*:** Economic theories of innovation and R&D spillovers-Structure and impact of digital platforms: Google, Amazon, Uber-Economics of cryptocurrencies and decentralized finance-Gig economy: flexibility, precarity, and labor market policies-Market structure in digital environments-Case discussion: Antitrust issues in tech companies
Learning Outcome: Students will evaluate how innovation and digital technologies are reshaping market competition, labor markets, and economic activity.

No. of Hours:24

***Module 5:* Policy Challenges and the Future of Economic Governance**
Scope of Module: Offers insight into future-oriented policy design and the governance of complex economies.
***Topics*:** Evolution of monetary and fiscal policy in the digital economy-Inequality: measurement, causes, and inclusive policy design-Ethics in AI-driven decision making: bias, transparency, accountability-Role of global institutions (IMF, WTO, G20) in shaping coordinated economic responses
Learning Outcome: Evaluate emerging policy challenges and propose governance solutions for future economic development.

Module	No of Pre-Recordings
1	10
2	12
3	10
4	10
5	12

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Basic understanding of Analytical thinking and Basic data analysis

Pedagogy / Teaching Methodology

- ✓ Expert talks
- ✓ Case based learning
- ✓ Quiz

Suggested Readings:

Books:

- Aghion, P., & Howitt, P. (2009). *The Economics of Growth*. MIT Press.
- Varian, H. R. (2010). *Intermediate Microeconomics: A Modern Approach*. W.W. Norton & Company.
- Acemoglu, D. (2018). *Introduction to Modern Economic Growth*. Princeton University Press.
- Arthur, W. B. (2021). *Foundations of Complexity Economics*. Complexity Press.
- Romer, D. (2018). *Advanced Macroeconomics*. McGraw-Hill Education.

Online Articles, Journals, and Whitepapers:

- *Journal of Economic Modeling* – Elsevier
- *The Economist* Special Reports on Digital Economy and AI
- World Economic Forum Whitepapers on Future of Work & Global Risks
- IMF and World Bank Working Papers on global financial and policy trends
- OECD Reports on AI, digital transformation, and economic governance

Web-based Resources:

- NBER Working Papers
- VoxEU.org – CEPR Policy Portal
- Our World in Data – Data-driven global development research
- IMF eLibrary – Global policy research and analysis
- World Bank Open Knowledge Repository

Recommended Software/Tools

- R (for statistical analysis and econometrics)
- NetLogo (for agent-based economic modeling)
- Google Colab / Jupyter Notebooks (for collaborative modeling and simulation)

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	3	2	3	-	-	-	-	3	-	-
CO2	2	3	-	2	2	3	-	-	2	-
CO3	2	-	3	-	3	-	2	-	3	2
CO4	-	3	-	3	2	-	2	2	-	3
CO5	-	2	-	2	2	3	3	-	2	3
Articulation	2.3	2.5	3	2.3	2.2	3	2.3	2.5	2.3	2.6

SEMESTER III

Course Title:	**Fundamentals of Econometrics**
Course Code:	**25VME3C301**
Semester:	**III**
Credits:	**4**
Course Type	**Core Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description:

This course offers a comprehensive understanding of econometric theory and its practical applications in economics and finance. It begins with foundational regression models and their assumptions, progressing to the diagnosis and correction of

assumption violations. The course delves into advanced topics such as qualitative variables, limited dependent variable models, and time series analysis including ARIMA and VAR models. It also covers panel data techniques with Fixed and Random Effects, and GMM estimation. By integrating statistical tools with real-world economic data, this course equips students with analytical skills vital for data-driven decision-making in research, policymaking, and industry forecasting roles.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Analyze relationships between economic variables using Ordinary Least Squares (OLS) estimation.	L3
CO2	Assess econometric models for multicollinearity, heteroscedasticity, and autocorrelation to maintain model integrity.	L5
CO3	Interpret dummy variable regression results and limited dependent variable models to assess the impact of qualitative and nonlinear factors.	L5
CO4	Evaluate time series models for forecasting dynamic economic behavior.	L5
CO5	Implement panel data methods to investigate complex economic phenomena across time and entities.	L6

Course Modules

No. of Hours:24

Module 1:Simple and Multiple Regression Analysis
Scope of Module This module covers econometric modeling and regression analysis, essential for data-driven decision-making in economics, finance, and policy analysis.

Topics:

Steps in Econometric Analysis, Terminologies and Notations, Population Regression Function, Sample Regression Function, significance of disturbance term, Two variable regression model, Assumptions, ordinary least square estimators, BLUE property, Goodness of fit, ANOVA, Interpretation of regression coefficients, Multiple Linear Regression Model: Interpretation of regression coefficients, goodness of fit, R-squared and adjusted R-Squared; F-test, relation between F and t Statistics, Functional form: lin lin model, lin log model, log lin model, log log model

Learning Outcome: Apply econometric techniques to analyze relationships between variables, interpret regression results, and support data-driven decisions in economics and finance.

No. of Hours:24

Module 2:Model Specification and Diagnostic Testing
Scope of Module Students will explore CLRM assumption violations, detect issues like multicollinearity and heteroscedasticity, and apply diagnostic tests and correction techniques.
Topics: Violations of CLRM Assumptions: Consequences, Detection and Remedies – Multicollinearity, Heteroscedasticity and Autocorrelation- Model specification errors (omitted variable, inclusion of irrelevant variables, measurement error in dependent and independent variables), endogeneity problem
Learning Outcome: Diagnose and address violations of CLRM assumptions using statistical tests, enhancing model reliability and accuracy in econometric analysis.

No. of Hours:24

Module 3:Dummy Variables Model
Scope of Module This module develops skills in using dummy variables, interaction effects, limited dependent variable models, and advanced regression techniques for analysis.
Topics: Regression on dummy (qualitative) variables with two categories, with more than two categories-intercept shifters, dummy variable trap, interaction of two categorical variables, interaction of categorical and continuous (quantitative) variables- slope shifters, piecewise linear regression model, linear probability, logit, probit and tobit models, specification – estimation methods – applications
Learning Outcome: Apply advanced regression techniques with dummy variables and limited dependent variable models to analyze categorical and nonlinear relationships in data.

No. of Hours:24

Module 4:Time Series Analysis
Scope of Module This module covers time series modeling with ARIMA, VAR, VECM, unit root testing, cointegration, Granger causality, and impulse response analysis.

Topics: Stationary and non-Stationary Data, Test for stationary, Graphical Analysis–ACF and PACF, General Unit Root Tests: Dickey Fuller Test, Augmented Dickey Fuller Test, autocorrelation function and partial auto-correlation function – auto-regressive (AR) models, moving average (MA) models, ARMA and ARIMA models, Autoregressive Distributive Lag Models, Vector autoregressive (VAR) models, Granger causality, Impulse response function, Variance decomposition, Cointegration, Vector error correction models (VECMs)
Learning Outcome: analyze time series data using ARIMA, VAR, and VECM frameworks, applying diagnostic tests and interpreting dynamic economic relationships.

No. of Hours:24

Module 5:Panel Data Analysis
Scope of Module This module integrates econometric techniques with panel data methods to solve real-world problems using Fixed/Random Effects, GMM, and model diagnostics.
Topics: Concept of Panel Data, Balanced and unbalanced panel data, within –between effects, drawbacks of longitudinal data, Pooled Method, Fixed Effect Method, Random Effect Method, Breusch Pagan test, Hausman Test, dynamic panel models – GMM estimation
Learning Outcome: Apply panel data techniques, including Fixed/Random Effects and GMM, to analyze dynamic relationships and address real-world economic and financial problems.

Module	No of Pre-Recordings
1	12
2	10
3	10
4	12
5	10

Note: Minimum number of pre-recordings is 10**.**

Prerequisites (If Any):

- Basic knowledge of introductory statistics
- Understanding of Inferential statistics

Pedagogy / Teaching Methodology:

- ✓ Hands on Approach
- ✓ Interactive Lectures
- ✓ Case based learning and real world problem solving

- ✓ Quiz

Certificate / Value Added Courses Recommended (with Free Resource Links):

1. NPTEL: https://onlinecourses.nptel.ac.in/noc21_hs01/preview

Suggested Readings:

Books:

- Wooldridge M Jeffrey (2016), Introductory Econometrics: A Modern Approach, Cengage Learning, 6th Edition.
- Damodar N Gujarati and D C Porter (2009), *Basic Econometrics*, McGraw Hill Publication, 5th Edition
- A Koutsoyiannis (2001), Theory of Econometrics, Palgrave Macmillan, 2nd Edition.
- Bhaumik, S.K. (2015) *Principles of Econometrics: A Modern Approach Using EViews*, Oxford University Press.

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3

CO1	3	-	3	-	-	-	-	3	-	-
CO2	2	3	2	-	-	-	-	2	-	-
CO3	2	-	2	2	2	-	-	-	2	2
CO4	-	2	-	2	3	-	2	2	2	-
CO5	-	3	-	2	2	2	-	-	3	3
Articulation	2.3	2.6	2.3	2	2.3	2	2	2.3	2.3	2.5

Course Title:	**Welfare Economics**
Course Code:	**25VME3C302**

Semester:	**III**
Credits:	**4**
Course Type	**Core Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description:

This course delves into the core principles of Welfare Economics and General Equilibrium Theory, exploring how individual preferences are aggregated into social choices and how resources are allocated efficiently. Topics include welfare maximization, market failures, externalities, public goods, and risk under uncertainty. With its focus on efficiency, equity, and optimal policy interventions, this course is highly relevant for careers in public policy, economic research, development planning, and regulatory institutions where welfare analysis and resource allocation are critical.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Analyze key concepts such as social welfare functions, Pareto optimality, and utility maximization within different economic frameworks.	L3
CO2	Evaluate the conditions for the existence, stability, and uniqueness of general equilibrium and its implications for efficient resource allocation.	L5
CO3	Identify causes and consequences of market failures and evaluate corrective policy measures.	L5
CO4	Evaluate time series models for forecasting dynamic economic behavior.	L3
CO5	Implement panel data methods to investigate complex economic phenomena across time and entities.	L5

Course Modules

No. of Hours:24

Module 1: Fundamentals of Welfare Economics
Scope of Module Covers welfare optimization, preference aggregation, social choice, and equilibrium theorems—vital for policy-making, economic planning, and resource allocation.
Topics: Welfare Function, Aggregation of Preferences, Social Choice, Social Welfare Functions, Maximization of Social Welfare, Impediments to Welfare Maximization, First and Second Fundamental Theorems of Welfare Economics, Pure-exchange economy, Concept of contract curve, Welfare and Utility
Learning Outcome: Analyze welfare functions, social choice, and equilibrium concepts to evaluate efficient resource allocation and policy implications in real-world economies.

No. of Hours:24

Module 2: General Equilibrium Theory
Scope of Module Explore general equilibrium theory, equilibrium properties, and resource allocation using Walrasian models, input-output analysis, and Pareto efficiency tools.
Topics: Existence, Stability, and Uniqueness of the Equilibrium, Pareto Optimality Condition, General Equilibrium Theory, Welfare Properties, Walrasian Excess Demand and Input-Output Approaches to General Equilibrium, Non-Walrasian Equilibrium, Properties of General Equilibrium State, Simultaneous Equilibrium, General Equilibrium and Allocation of Resources, Prices of Commodities and Factors, Factor Ownership and Income Distribution.
Learning Outcome: Evaluate general equilibrium models, assess equilibrium conditions, and analyze resource allocation, pricing, and income distribution using economic theory and tools.

No. of Hours:24

Module 3: Pre-Paretian and Paretian Welfare Economics
Scope of Module Students will develop understanding of welfare economics frameworks, Pareto-optimality, consumer surplus, externalities, social welfare functions, and compensation criteria.
Topics: Pre-Paretian Welfare Economics: Measurement of Economic Welfare - Definition - Benthamite Approach to Aggregate Welfare - Optimum Resource Allocation and Welfare Maximization - Issue of Interpersonal Comparisons of Utility Principles of Compensating Variation - Hick's Consumer's Surpluses - Concept of Consumer's Surplus - Consumer's Surplus and Tax-Bounty Analysis. - Utilitarian Economics. Paretian Welfare Economics: Pareto-Optimality and Market Equilibrium - Arrow's Impossibility Theorem - Externalities and Market Failures - Welfare Economics and Social Choice Theory - Pigouvian Welfare Economics - Second Best Optima - Sen's Contributions to Welfare Economics - Collective Choice and Social Welfare - Compensation Criteria- Contributions of Barone, Kaldor and Hicks; Scitovsky Double Criterion - Bergson's Social Welfare Function -Welfare and General

Equilibrium - Pareto-Optimality and Market Equilibrium - Samuelson's Utility Possibility Curve - Value Judgments and Welfare Economics.
Learning Outcome: **A**nalyze welfare economics frameworks, evaluate market failures, apply compensation criteria, and assess social welfare functions and optimal resource allocation.

No. of Hours:24

Module 4: Market Failure and Public Goods
Scope of Module Explore public goods theory, government intervention, externality solutions, Pigovian taxes, Coasian bargaining, second-best solutions, and addressing market imperfections.
Topics: Reasons for market failure – market imperfections, public goods, externality, macro-economic factors; types of public goods, theory of public goods – provision and pricing, government intervention, second-best solution, free riding, types of externalities – production and consumption externalities, Pigovian and Coasian solutions
Learning Outcome: Evaluate market failures, apply public goods theory, analyze externality solutions, and assess government interventions to optimize resource allocation and efficiency.

No. of Hours:24

Module 5: Uncertainty
Scope of Module Apply risk analysis, inter-temporal decision-making, and probabilistic modeling to real-world problems involving uncertainty, consumer behavior, and strategic choices.
Topics: Introduction, Contingent consumption, Uncertainties, Probabilities, and Expected values, Attitudes towards risk, Inter-temporal choice in consumption and decision rules under uncertainty, Individual behavior towards risk
Learning Outcome: Analyze risk, uncertainty, and inter-temporal choices, and evaluate individual behavior towards risk using probabilistic models and decision-making frameworks.

Module	No of Pre-Recordings
1	10
2	12
3	12
4	10
5	10

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Basic knowledge Micro Economic Theory.
- Logical and Analytical Thinking

Pedagogy / Teaching Methodology:

- ✓ Interactive Lectures with Real-World Case Studies
- ✓ Case based learning
- ✓ Quiz

Certificate / Value Added Courses Recommended (with Free Resource Links):

1. NPTEL: Conservation Economics:

https://onlinecourses.nptel.ac.in/noc25_bt15/preview

Suggested Readings:

Books:

- Henderson, M. and R.E. Quandt, Microeconomic Theory: Mathematical Approach, McGraw Hill, 3rd edition.
- Dominick Salvatore, (2008) Microeconomics Theory and Applications, Oxford University Press, New York.
- Varian, H.: Microeconomic Analysis, W.W. Norton, 3rd Edition, 1992
- Perloff, Jeffrey M. (2001). Microeconomics. Pearson Education Asia (Delhi)

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	3	2	2	-	-	-	-	3	-	-
CO2	2	3	3	-	-	-	-	2	-	-
CO3	-	2	2	3	2	2	-	-	2	-
CO4	2	3	-	2	-	-	2	-	-	3
CO5	3	-	-	-	2	2	2	-	2	3
Articulation	2.5	2.5	2.3	2.5	2	2	2	2.5	2	3

Course Title:	**Behavioural Economics**
Course Code:	**25VME3C303**
Semester:	**III**
Credits:	**4**
Course Type	**Core Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description:

This course explores behavioural economics, focusing on how psychological factors influence economic decision-making. The course covers real-world applications such as nudges, libertarian paternalism, and neuroeconomics, linking economic theory with human behaviour. Its relevance spans industries like finance, marketing, public policy, and health, where understanding consumer behaviour and improving decision-making processes are crucial for effective strategies and interventions.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Analyze the core principles of behavioral economics and its interdisciplinary connections.	L3
CO2	Apply theories like Prospect Theory, Loss Aversion, and mental accounting to assess decision-making under risk and uncertainty.	L3
CO3	Assess anomalies in the Discounted Utility Model and alternative models such as hyperbolic discounting to understand time-inconsistent preferences.	L5
CO4	Assess anomalies in the Discounted Utility Model and alternative models such as hyperbolic discounting to understand time-inconsistent preferences.	L5
CO5	Investigate the application of behavioural economics in areas like poverty, health, media bias	L5

Course Modules

No. of Hours:24

Module 1: Introduction to Behavioural Economics
Scope of Module This module covers behavioural economics theory, decision-making biases, and case studies on loss aversion, money illusion, and altruism, relevant for policy-making and consumer behaviour analysis.
Topics: Nature of Behavioral economics -Methodological approach: Theory and evidence -Origins of behavioral economics- Neo-classical and behavioral approaches to studying economics- Relationship with other disciplines- Application: Case studies on Loss aversion, Money Illusion, Altruism.
Learning Outcome: Analyze behavioral economics theory, evaluate biases like loss aversion and money illusion, and apply them to real-world economic decisions.

No. of Hours:24

Module 2: Foundations of Behavioral Economics
Scope of Module Students will explore decision-making under risk, prospect theory, loss aversion, heuristics, biases, and analyze case studies on endowment effect.
Topics: Values, Preferences and Choices: The standard model- Axioms, assumptions and definitions- Decision making under risk and uncertainty: Prospect theory- Reference points- Loss Aversion- Shape of utility function- Decision weighting- Heuristics and Biases-Application: Case studies on Endowment Effect and Loss Aversion. Mental accounting: Nature and components of mental accounting- Framing and editing- Budgeting and fungibility- Choice bracketing and dynamics-Policy implications- Libertarian paternalism and choice architecture- Nudges- Application - Introduction to Neuroeconomics
Learning Outcome: Evaluate decision-making under risk, apply prospect theory, mental accounting, and nudges, and explore neuroeconomics and policy implications for behavior.

No. of Hours:24

Module 3: Intertemporal Choice
Scope of Module Students will explore the Discounted Utility Model, time preference, anomalies, and alternative intertemporal models like hyperbolic discounting and time inconsistency.

Topics: The Discounted Utility Model: Origin and features of Discounted Utility Model (DUM)- Methodology- Anomalies in DUM- Alternative Intertemporal Choice Models: Time preference- Time inconsistent preferences- Hyperbolic discounting
Learning Outcome: Analyze the Discounted Utility Model, identify its anomalies, and evaluate alternative intertemporal choice models like hyperbolic discounting and time inconsistency.

No. of Hours:24

Module 4: Behavioral game theory
Scope of Module Explore behavioral game theory applications, including mixed strategies, bargaining, iterated games, signaling, and learning, through case studies on market entry and bargaining.
Topics: Nature of behavioral game theory- Mixed strategies- Bargaining- Iterated games- Signaling- Learning- Application: Case studies on Market entry in Monopoly and Impasses in bargaining and self-serving bias.
Learning Outcome: Analyze behavioral game theory concepts, including mixed strategies, bargaining, signaling, and learning, and apply them to real-world case studies.

No. of Hours:24

Module 5: Behavioural development and Policy
Scope of Module Integrate behavioral economics to address development, poverty, health, media bias, political policy, and paternalism, applying insights for real-world solutions.
Topics: Behavioural development and poverty; Behavioural health, Behavioural economics and policy; media bias and politics, policy and paternalism
Learning Outcome: Analyze the application of behavioral economics in development, poverty, health, policy, and politics, and evaluate its impact on decision-making.

Module	No of Pre-Recordings
1	12
2	12
3	10
4	10
5	10

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Basic knowledge Micro Economic Theory.
- Introductory Psychology
- Logical and Analytical Thinking

Pedagogy / Teaching Methodology:

- ✓ Interactive Lectures with Real-World Case Studies
- ✓ Case based learning and practical application
- ✓ Quiz

Certificate / Value Added Courses Recommended (with Free Resource Links):

1. Behavioural Finance: https://onlinecourses.swayam2.ac.in/imb25_mg37/preview

Suggested Readings:

Books:

- Nick Wilkinson and Matthias Hales, An Introduction to Behavioral Economics, 2nd Edition, Palgrave Macmillan 2012
- Edward Cartwright, Behavioural Economics, Routledge 2011.
- Erik Angner, A Course in Behavioral Economics, Palgrave Macmillan 2012.
- Dan Ariely, "Predictably Irrational: The Hidden Forces that Shape Our Decisions", Harper Collins 2009
- Diamond, P. and H. Vartianen, Behavioral Economics and Its Applications, Princeton University Press, 2007.

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

CO \ PO/PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	2	3	-	-	-	-	3	-	2	3
CO2	3	-	3	-	-	2	-	3	-	-
CO3	3	2	-	2	-	-	-	-	2	2
CO4	2	3	-	2	2	-	2	-	2	3
CO5	-	2	-	2	3	2	2	-	3	3
Articulation	2.5	2.5	3	2	2.5	2	2.3	3	2.5	2.7

Course Title:	**Environment and Resource Economics**
Course Code:	**25VME3C304**
Semester:	**III**
Credits:	**4**
Course Type	**Discipline Specific Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description:

This course explores the intersection of economics and the environment, covering resource economics, market failure, and environmental sustainability. Students will analyze the relationship between economic development and environmental stress, explore theories like the Environmental Kuznets Curve, and evaluate policy strategies for managing renewable and non-renewable resources. This course is highly relevant to industries focused on sustainability, environmental management, natural resource governance, and policy-making, where balancing economic growth with environmental preservation is essential.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Analyze the relationship between economic systems and environmental factors	L3
CO2	Assess the concept of sustainable development, including empirical evidence of the Environmental Kuznets Curve	L5
CO3	Utilize economic models such as Hotelling's Rule and Solow-Hartwick's Rule to determine optimal resource extraction policies	L3
CO4	Examine economic models for managing renewable resources	L3
CO5	Apply market and non-market valuation methods to frame policy decisions	L3

Course Modules

No. of Hours:24

Module 1: Basic Concepts
Scope of Module Covers economy-environment interactions, resource economics, market failure, and property rights, crucial for sustainable resource management and environmental policy.
Topics: Economy-environment interaction; Material Balance Principle; entropy law; market failure; property rights; open, closed and common access resources; resource economics – environmental economics – ecological economics: characteristics and synergy
Learning Outcome: Analyze economy-environment interactions, apply the Material Balance Principle, evaluate market failure, and understand the synergy between resource and ecological economics.

No. of Hours:24

Module 2: Environment vs Development
Scope of Module Explore sustainable development, the Environmental Kuznets Curve, sustainability indicators, and environmental accounting techniques for measuring development impact.
Topics: Relation between development and environmental stress; Environmental Kuznet's curve hypothesis – theory and empirical evidence; concept of sustainable development; indicators of sustainability; various approaches to environmental accounting
Learning Outcome: Evaluate the relationship between development and environmental stress, analyze sustainability indicators to assess sustainability.

No. of Hours:24

Module 3: Economics of Exhaustible Resources
Scope of Module Develop understanding of optimal resource extraction policies, Hotelling's and Solow-Hartwick's Rules, market structures, and resource scarcity indicators under uncertainty.

Topics: Hotelling's rule; Solow-Hartwick's Rule; competitive market structures and optimal extraction policy; monopoly, oligopoly, cartel and other market structures – optimal extraction policy; uncertainty and the rate of resource extraction; exploration and extraction; resource scarcity – indicators, evidence and critique.
Learning Outcome: Evaluate optimal resource extraction policies, analyze market structures, and assess resource scarcity, applying Hotelling's and Solow-Hartwick's Rules in uncertain contexts.

No. of Hours:24

Module 4: Economics of Renewable Resources
Scope of Module Apply economic models to manage renewable resources, optimize harvest cycles, assess biodiversity economics, and evaluate species extinction impacts.
Topics: Characteristics of renewable resources – growth functions and growth rate; economic models of fisheries, economics of optimal harvest cycles of forests; extinction of species, economics of biodiversity.
Learning Outcome: Analyze renewable resource management, optimize harvest cycles, evaluate biodiversity economics, and assess the economic implications of species extinction.

No. of Hours:24

Module 5: Techniques of Valuation
Scope of Module Integrate valuation methods, social cost-benefit analysis, and environmental impact assessments to address real-world environmental policy and resource management challenges.
Topics: Market and non-market valuation; Physical linkage methods; Abatement cost methods; Behavior linkage methods - Revealed and stated preference; Social cost benefit analysis; Environmental impact assessment
Learning Outcome: Apply market and non-market valuation methods, conduct cost-benefit analysis, and perform environmental impact assessments to inform policy decisions.

Module	No of Pre-Recordings
1	10
2	10
3	12
4	10
5	12

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Basic knowledge Micro Economic Theory.
- Introductory Environmental Concepts
- Critical Thinking and Policy Orientation
- Basic knowledge Mathematics for Economics
- Logical and Analytical Thinking

Pedagogy / Teaching Methodology:

- ✓ Interactive Lectures with Real-World Case Studies
- ✓ Case based learning and practical application
- ✓ Quiz

Certificate / Value Added Courses Recommended (with Free Resource Links):

1. Environmental & Resource Economics: https://onlinecourses.nptel.ac.in/noc21_hs56/preview

Suggested Readings:

Books:

- Hanley, N., J.F. Shogren, and B. White, Environmental Economics: In Theory and Practice, Oxford University Press, 2006.
- Kolstad, C., Environmental Economics, Oxford University Press, 2000
- Bhattacharya, R.N. (2001), Environmental Economics – An Indian Perspective, Oxford University Press, Delhi.
- Conrad, J.M. and C. Clark, Natural Resource Economics – Notes and Problems, Cambridge University Press, 1987.

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global

2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

CO \ PO/PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	2	2	-	2	-	3	2	-	-	3
CO2	-	2	2	-	3	2	2	-	2	3
CO3	3	-	3	-	2	-	-	3	-	-
CO4	2	-	3	2	-	-	2	2	2	-
CO5	-	3	-	3	2	2	-	-	3	2
Articulation	2.3	2.3	2.6	2.3	2.3	2.3	2	2.5	2.3	2.6

Course Title:	**Research Methodology**
Course Code:	**25VME3C305**
Semester:	**III**
Credits:	**4**
Course Type	**Multi-Disciplinary Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description:

This course provides a comprehensive foundation in social science research methodology, exploring epistemological approaches, theory construction, and ethical considerations. It emphasizes both qualitative and quantitative research methods, including case studies, action research, and triangulation. Students will learn to identify research gaps, formulate hypotheses, and design research tools like surveys, interviews, and questionnaires. The course also covers data sources, evaluation techniques, and interdisciplinary methodologies. It is highly relevant for careers in academia, policy analysis, market research, development studies, and organizational consulting, where strong research skills are essential for evidence-based decision-making and impactful social or managerial interventions.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Analyze the philosophy, nature of knowledge, and theory in social science research, including objectivity and value considerations.	L3
CO2	Develop theoretical, applied, and action research frameworks, addressing ethical concerns and inclusive approaches in research.	L6

CO3	Identify research gaps through literature review and formulate clear, researchable problems, hypotheses, or propositions.	L3
CO4	Employ uni-, inter-, and multi-disciplinary approaches using qualitative and quantitative methods including case studies, action research, and triangulation.	L3
CO5	Evaluate data sources and tools such as surveys, interviews, observations, and statistical systems for reliable and valid research.	L5

Course Modules

No. of Hours:24

Module 1: Introduction to research & research methods
Scope of Module This module explores knowledge systems, research philosophy, and objectivity in social sciences, essential for critical thinking in research-intensive industries.
Topics: Ways of knowing and understanding the world and the research process - The nature of knowledge and theory - Philosophy of Social Science Research - Relevance of Social Science Research - Objectivity and Values in Social Sciences.
Learning Outcome: Critically evaluate knowledge systems, research philosophy, and objectivity in social sciences to strengthen analytical thinking and research orientation across domains.

No. of Hours:24

Module 2: Logic of Scientific Investigation
Scope of Module Students explore theory building, types of research approaches, ethical frameworks, and inclusive research practices in social and managerial contexts.
Topics: Theory Construction in Social Science Research - Approaches to Social Science and Managerial Research, Theoretical, Applied and Action Research - Ethical Issues in Research on Human or Social Subjects - Non-sexist approach in Social Sciences.
Learning Outcome: Develop theoretical frameworks, distinguish research types, and apply ethical and inclusive principles in conducting social and managerial research effectively.

No. of Hours:24

Module 3: Research Design
Scope of Module Students will develop skills in literature review, identifying research gaps, framing research problems, and formulating hypotheses or propositions for investigation.
Topics: Review of Literature - Identification of Research Gaps and Research Needs - Identification, selection and formulation of research problem - Formulating Hypotheses/Propositions/Issues, conceptualizing research problem. Review of Literature - Identification of Research Gaps and Research Needs - Identification, selection and formulation of research problem - Formulating Hypotheses/Propositions/Issues, conceptualizing research problem.
Learning Outcome: Identify research gaps, conduct effective literature reviews, and formulate clear research problems, hypotheses, and propositions for structured inquiry.

No. of Hours:24

Module 4: Overview of Social Science Methodology
Scope of Module Explore diverse research methodologies, apply case study and action research, use monitoring and evaluation, and integrate qualitative-quantitative methods via triangulation.
Topics: Uni-disciplinary, inter-disciplinary, multi-disciplinary methodologies - Quantitative Research Methods: An Overview - Qualitative Research Methods: An Overview - Historical Method - Case Study Method - Action Research - Monitoring and Evaluation - Triangulation (including/mixing Qualitative and Quantitative) Methods, probability sampling and non-probability sampling
Learning Outcome: Apply uni-, inter-, and multi-disciplinary methodologies, evaluate quantitative and qualitative methods, and integrate approaches using triangulation for comprehensive research analysis.

No. of Hours:24

Module 5: Information needs and use in social sciences
Scope of Module Integrate primary and secondary data, apply survey techniques, analyze quantitative and qualitative data, and utilize interviews and ethnography for comprehensive research.
Topics: Secondary Sources of Information: Using and Integrating secondary and primary information - Quantitative Data: Kinds and quality of Data, demography, labour force, agriculture, industry - Quantitative Data: Human resources, education, health, housing, employment, banking, rural data bas - Quantitative Data: Survey Reports, Research Studies, Historical Data Tools - Statistical Systems – International, National and Local: Objectivity, Reliability and Validity of Data -

Surveys and Questionnaires: Questionnaire, Schedule Design and Construction, Sample Surveys, Survey Administration - Observation – Structured and unstructured, Recording and Interpretation of Observations, Ethnography - Interviews: Nature of the Interview Process - Structured and Unstructured Interviews, Focus Groups, Group Discussions.
Learning Outcome: Apply secondary and primary data, design surveys and interviews, and evaluate data reliability and validity for effective research analysis.

Module	No of Pre-Recordings
1	10
2	10
3	10
4	12
5	12

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Introductory Statistics and Data Interpretation
- Academic Writing and Communication Skills
- Basic knowledge Mathematics for Economics
- Logical and Analytical Thinking

Pedagogy / Teaching Methodology:

1. Interactive Lectures with Real-World Case Studies
2. Hands on Research Project
1. Case based learning and practical application
2. Quiz

Certificate / Value Added Courses Recommended (with Free Resource Links):

1. https://onlinecourses.nptel.ac.in/noc22_ge08/preview
2. https://www.coursera.org/learn/research-methodologies

Suggested Readings:

Books:

- Alan Bryman, Liam Foster, Luke Sloan and Tom Clark (2021). Bryman's Social Research Methods, Oxford University Press.
- Bhattacherjee, A. (2012). Social science research: Principles, methods, and practices, University of South Florida, Scholar Commons
- Neuman, L. W. (2014). Social Research Methods: Qualitative and Quantitative Approaches, 7/E. Pearson Education India
- Krishnaswamy, O.R. Methodology of Research In Social Sciences, Himalya publishing House, 1993
- Kothari R.C. Research Methodology, Methods and Techniques, New Age International Publishers, IInd revised edition, reprint 2008.

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	2	3	-	-	-	-	3	-	2	3
CO2	-	3	-	2	2	-	2	-	-	3
CO3	2	-	3	-	2	-	-	2	2	-
CO4	2	3	-	2	-	-	2	-	3	2
CO5	3	-	3	-	-	2	-	3	-	-
Articulation		3	3	2	2	2	2.3	2.5	2.3	2.6

SEMESTER IV

Course Title:	**International Economics**
Course Code:	**25VME3C401**
Semester:	**IV**
Credits:	**4**
Course Type	**Core Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description:

This course provides a comprehensive understanding of international trade theories, policies, and financial systems. It examines the dynamics of global trade, exchange rate mechanisms, balance of payments, and the functioning of international financial institutions. Learners will analyze emerging trade issues, regional integration, and the impact of globalization on national economies. The course equips students with the analytical tools to evaluate international trade patterns and financial interactions in a globalized economy.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Illustrate the evolution of International Trade.	L2

CO2	Appraise the drivers of International Trade.	L5
CO3	Analyze the impact of Foreign Direct Investment on developing Economies.	L4
CO4	Assess the role of WTO in promoting International Trade.	L5
CO5	Examine the causes of the International Financial Crisis.	L4

Course Module

No. of Hours:24

Module 1: **Foundations and Evolution of International Trade Theory**
Scope of Module: The module covers both classical and contemporary theories of international trade and offers a comprehensive understanding of trade dynamics from a historical and modern perspective.
Topics: Fundamental theories of international trade-classical concepts -Absolute and Comparative Advantage- Heckscher-Ohlin model - Factor Price Equalization. Analysis of empirical evidence supporting theories. International trade and domestic trade, drivers and challenges. Trade models- Prebisch–Singer Model, and Jagdish Bhagwati's Growth Theory, Product Cycle Theory and the Technology Gap Theory- intra-industry trade-Innovation and product differentiation and changing global commerce.
Learning Outcome: Critically analyze classical and modern theories of trade, evaluate the influence of technology on trade patterns, and distinguish between inter- and intra-industry trade mechanisms.

No. of Hours:24

Module 2: **Balance of Payments and Exchange Rate Mechanisms**

Scope of Module: Focuses on macroeconomic indicators and currency mechanisms essential for evaluating a country's external economic stability and financial positioning.
Topics: Balance of Trade and Balance of Payments -components and economic implications. Causes of disequilibrium-Absorption and Monetary approaches for BoP adjustment. Exchange rate determination, comparison between fixed and flexible exchange rate systems, Purchasing Power Parity (PPP), and the functioning of forex markets.
Learning Outcome: Evaluate balance of payments, analyze exchange rate systems, and interpret the causes and solutions to international payment imbalances.

No. of Hours:24

Module 3: **Trade, Growth, and Protectionist Instruments**
Scope of Module: Provides theoretical and practical knowledge of trade policy instruments and their effects on domestic growth and international competitiveness.
Topics: Trade's role in economic growth-factor endowment expansion, The Rybzynski Theorem, and types of technical progress. Protectionist instruments include tariffs, quotas, and quantitative restrictions. Stolper-Samuelson and Optimum Tariff. The state trading monopolies, their objectives, and the theory of customs unions- trade creation and diversion.
Learning Outcome: Assess the impact of trade on economic growth and evaluate the effectiveness and implications of protectionist trade policies and regional integration.

No. of Hours:24

Module 4: **Global Institutions and Policy Frameworks**
Scope of Module: Offers insights into institutional structures that govern international finance and facilitate global development and capital flows.

Topics:

Historical development of international monetary systems- gold standard, Bretton Woods collapse, and optimum currency areas. The functions of institutions -IMF, World Bank, and IBRD. Terms of Trade (TOT), types of TOT International labor mobility and the operations of multinational corporations (MNCs) and their economic effects in developing countries.

Learning Outcome: Explain the roles of international financial institutions, analyze labor and capital movements, and understand global monetary transitions.

No. of Hours:24

Module 5: **Contemporary Global Trade Issues**

Scope of Module:

Integrates trade theory with current international developments, highlighting real-world applications, global trends, and strategic responses to economic disruptions.

Topics:

WTO's role in global trade and its impact on Indian economic policies. Regional trade blocs SAARC, BRICS, OPEC, and the EU. FDI flows, types (horizontal and vertical), benefits to home and host countries- India's EXIM policy- Recent international economic crises including the Euro crisis, trade wars- geopolitical conflicts and global trade implications.

Learning Outcome: Analyze contemporary trade and investment challenges, assess the strategic impact of trade blocs and FDI, and evaluate the economic effects of recent global crisis.

Module	No of Pre-Recordings
1	12
2	12
3	10
4	10
5	10

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Basic understanding of International relations and business

Pedagogy / Teaching Methodology:

- ✓ Blended learning
- ✓ Case based learning
- ✓ Guest talk

Certificate / Value Added Courses Recommended (with Free Resource Links):

1. International Economics: https://onlinecourses.swayam2.ac.in/nou25_hs33/preview

Suggested Readings:

Books:

- **Dominick Salvatore** – *International Economics*, Wiley, 2020
- **Paul Krugman, Maurice Obstfeld & Marc Melitz** – *International Economics: Theory and Policy*, Pearson, 2018
- **Robert Carbaugh** – *International Economics*, Cengage Learning, 2019
- **Thomas Oatley** – *International Political Economy*, Routledge, 2021
- **Appleyard, Field & Cobb** – *International Economics*, McGraw-Hill Education, 2017

Online Articles, Journals, and Whitepapers:

- **World Trade Organization Reports** – Trade policy reviews, dispute settlements, and global trade analysis
- **IMF Working Papers** – Exchange rate regimes, balance of payments adjustment mechanisms, capital flows
- **UNCTAD Trade and Development Reports** – In-depth studies on global trade, investment, and development issues
- **OECD iLibrary** – International trade and investment policy analysis

- **Journal of International Economics** (Elsevier) – Peer-reviewed articles on theoretical and empirical trade studies

Web-based Resources:

- World Trade Organization (WTO) – Agreements, trade statistics, negotiation rounds
- International Monetary Fund (IMF) – Research and data on global economic and financial issues
- World Bank Open Data – Country-level economic, trade, and finance data

Recommended Software/Tools:

- **Microsoft Excel** – For trade balance sheets, trend analysis, and BoP calculations
- **R / Stata / EViews** – For time series and panel data analysis in trade and finance
- **WTO Tariff Analysis Online Tool** – For examining global tariff structures and trends
- **IMF DataMapper / World Bank Data Tools** – For macroeconomic visualization and comparison

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	2	2	-	2	-	-	2	-	-	2
CO2	2	3	2	-	-	-	2	2	-	-

CO3	3	-	2	-	3	2	-	2	2	-
CO4	-	2	-	3	2	-	2	-	-	3
CO5	2	-	-	2	2	3	-	2	2	2
Articulation	3	2.3	2	2.3	2.3	2.5	2	2	2	2.3

Course Title:	**Public Finance**
Course Code:	**25VME3C402**
Semester:	**IV**
Credits:	**4**
Course Type	**Core Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description:

This course offers a comprehensive understanding of the role of government in the economy. It covers theoretical foundations and practical aspects of public expenditure, revenue, budgeting, taxation, and public debt management. The course also addresses contemporary issues such as the black economy, fiscal responsibility, Goods and Services Tax (GST), and public-private partnerships. Through critical analysis of India's fiscal framework and policy tools, learners will gain the ability to

evaluate government decisions in terms of economic efficiency, equity, and administrative feasibility.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

CO	Course Outcome	BTL
CO1	Interpret the foundational theories and principles of public finance, including the distinction between public and private goods and the principle of maximum social advantage.	**L2**
CO2	Analyze the structure, components, and execution of government budgets and evaluate their role in resource allocation and economic stabilization.	**L4**
CO3	Examine the causes, extent, and implications of the black economy on policy effectiveness, income distribution, and pricing.	**L4**
CO4	Evaluate the structure of taxation and public expenditure in India, including emerging fiscal tools like GST and Public-Private Partnerships.	**L5**
CO5	Assess the frameworks of fiscal responsibility, public sector management, and Union Budget priorities in promoting sustainable and inclusive economic growth.	**L5**

No. of Hours:24

Module 1: **Principles of Public Finance and Budgetary Framework**
Scope of Module: Covers core principles of public finance, implications of the black economy, and structural budgeting processes in India.
Topics: Theories and principles of public finance-Public goods vs. private goods-Principle of maximum social advantage-Fiscal functions of government- Recommendations of the Finance Commission-Estimates and impact of the black economy in India-Effects of the black economy on income, prices, and policy effectiveness-Budgetary process and allocation of resources-Indian system of devolution and constitutional mechanisms- Role of the budget in economic growth and stabilization-Government budgeting: meaning, presentation, and execution-

Components of the budget: revenue and capital accounts-Economic classification of the budget-Budget deficits and their macroeconomic implications
Learning Outcome: Analyze public finance frameworks, examine the black economy's effects on economic policy, and interpret the budgeting process in the Indian fiscal system.

No. of Hours:24

Module 2: **Revenue Systems, Taxation, and Fiscal Structures**
Scope of Module: Explores India's revenue generation systems, taxation principles, and fiscal strategies.
Topics: Trends in revenue and expenditure of the Union and States- Concepts of budget: revenue, budgetary, primary, and fiscal- Approaches to budgeting: Outcome Budget, Budgetary Reforms, New Public Management- Overview of the Indian tax system and recent reforms- Issues in tax evasion and taxation of income, wealth, and agriculture- Tax buoyancy and administration- Voluntary disclosure schemes- Non-tax revenues of Centre and States-Impact and incidence of taxes- Laffer's Curve and implications for fiscal design
Learning Outcome: Evaluate the structure of public revenue, interpret key taxation policies, and examine evolving fiscal practices in India.

No. of Hours:24

Module 3: **Public Expenditure, Debt Management, and GST Framework**
Scope of Module: Analyzes trends in public spending, debt mechanisms, and the GST framework in India.

Topics:

Analysis of Union and State public expenditure- Contemporary issues and trends in public expenditure- Role of public spending in economic development, employment generation, and inequality reduction- Types and constitutional aspects of public debt- Debt management, utilization, and repayment mechanisms- Role of RBI in managing public debt-GST structure and implementation

Learning Outcome: Interpret the significance of public expenditure and debt, and assess the impact of GST on fiscal federalism and economic planning.

No. of Hours:24

Module 4: **Fiscal Policy, Public Investment, and PPP Initiatives**

Scope of Module:

Explores the role of fiscal tools, investment planning, and public-private partnerships in promoting economic growth.

Topics:

Fiscal policy for inflation, stagnation, and planning- Deficit financing and the Fiscal Responsibility Bill- Programming and management of public investment- Role and functions of NITI Aayog- Sources and challenges of local finance- Measures to improve financial autonomy of local bodies- Concept and objectives of Public-Private Partnerships (PPP)- Analytical framework for assessing PPP models

Learning Outcome: Evaluate fiscal policy strategies, investment programs, and PPP models for sustainable public sector development.

No. of Hours:24

Module 5: **Fiscal Responsibility, Public Utilities, and Union Budget**

Scope of Module:

Covers principles of fiscal discipline, public sector management, and the structural focus of the Union Budget

Topics:

Finance Commission's recommendations- Parliamentary financial committees- Principles of revenue, expenditure, and budgeting- Characteristics and pricing challenges of public utilities- Government's role in a market-driven economy- Structure and focus areas of the Union Budget- Seven pillars of economic revival: health, infrastructure, inclusion, human capital, innovation, governance

Learning Outcome: Assess fiscal responsibility mechanisms and budget priorities to understand their impact on public utilities and national economic planning.

Module	No of Pre-Recordings
1	12
2	12
3	10
4	10
5	10

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Introductory knowledge of Public Economics or Welfare Economics

Pedagogy / Teaching Methodology

- ✓ Blended learning
- ✓ Case based learning
- ✓ Quiz

Certificate/Value Added Course:

1. https://onlinecourses.swayam2.ac.in/cec24_mg26/preview

Suggested Readings:

Books:

- Musgrave, R.A., & Musgrave, P.B. *Public Finance in Theory and Practice*. McGraw-Hill Education, 1989.
- Bhatia, H.L. *Public Finance*. Vikas Publishing House, 2021.
- Lekhi, R.K. *Public Finance*. Kalyani Publishers, 2020.
- Tyagi, B.P. *Public Finance*. Jai Prakash Nath & Co., 2020.

Online Articles, Journals, and Whitepapers:

- Government of India Budget Documents (https://www.indiabudget.gov.in/)
- Reserve Bank of India Reports (https://rbi.org.in)
- Articles from *Economic and Political Weekly (EPW)*
- OECD Working Papers on Public Finance and Fiscal Policy

Web-based Resources:

- Ministry of Finance, Government of India (https://www.finmin.nic.in/)
- NITI Aayog Reports and Policy Briefs (https://www.niti.gov.in/)
- PRS Legislative Research (https://prsindia.org/)
- IMF Fiscal Monitor (https://www.imf.org/en/Publications/FM)

Recommended Software/Tools:

1. MS Excel – for basic data analysis and budget modeling
2. R or Python (Pandas, Matplotlib) – for public finance data visualization and interpretation
3. SPSS/Stata – for statistical analysis in fiscal research
4. Google Sheets – for collaborative fiscal budgeting exercises

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	3	2	-	2	-	-	-	2	-	-
CO2	3	-	2	3	2	-	-	-	2	-
CO3	-	3	2	2	-	2	-	-	-	3
CO4	2	-	3	-	3	-	2	3	-	-
CO5	2	2	-	2	2	3	-	-	3	2
Articulation										

Course Title:	**Economics of Health and Education**
Course Code:	**25VME3C403**
Semester:	**IV**
Credits:	**4**
Course Type	**Discipline Specific Course**
Learning Hours	**120**

Live Sessions	**12 hours**

Course Description:
This course explores the application of economic principles in the domains of health and education. It focuses on demand and supply dynamics, cost-benefit analyses, policy impacts, and the broader socio-economic determinants influencing both sectors. Emphasizing both national and global contexts, it enables students to evaluate economic efficiency, equity, and policy effectiveness in health and education systems.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

	Course Outcome	BTL
CO1	Apply economic theories to analyze demand, supply, and pricing in the health and education sectors.	L3
CO2	Evaluate healthcare and education expenditures and their implications for policy.	L5
CO3	Assess the impact of public and private sector participation on service delivery in health and education.	L5
CO4	Interpret economic tools like cost-benefit analysis and elasticity in shaping sectoral outcomes.	L2
CO5	Compare global best practices and policy frameworks in health and education economics.	L4

Course Module

No. of Hours:24

Module 1: **Introduction to Health and Education Economics**
Scope of Module: Introduces the economic rationale behind health and education services.
Topics: Economics of Health and Education-Public vs. Private Goods- Relevance of Microeconomic Tools (Demand, Supply, Price)-Health vs. Health Care- Equity and Efficiency- Role of Government and Market Failures
Learning Outcome: Students will be able to interpret the foundational economic principles in the context of health and education sectors.

No. of Hours:34

Module 2: **Microeconomic Foundations of Health and Education**
Scope of Module: Examines the demand and supply side considerations and financing mechanisms.
Topics: Demand and supply of health and education; understanding the market for health and education-Elasticity, Consumer Choice, and Insurance Markets- Health and Education Expenditure Trends in India- Public and Private Sector Involvement-Cost Functions and Production Efficiency Health and development; health-income linkages; Health Insurance Market: The standard insurance model; Group insurance and administrative costs; Informal insurance mechanisms-Complementarities between health and education. Market failures**:** Social objectives and market failures; Policy response; Financing public expenditures in health and education.
Learning Outcome: Analyze market behavior and financial mechanisms influencing health and education delivery**.**

No. of Hours:24

Module 3: **Economic Evaluation and Management Tools**
Scope of Module: Develops skills in economic evaluation techniques for policy and management.
Topics: Cost-Effectiveness, Cost-Utility, and Cost-Benefit Analysis- Budgeting in Health and Education- DALY, QALY Concepts- Production Function and Technical/Allocative Efficiency-Policy Impact on Outcomes. National Health Accounts (NHA) Health Technology and Assessment (HTA) Innovation in Healthcare
Learning Outcome: Apply economic evaluation tools to assess efficiency and effectiveness in both sectors.

No. of Hours:24

Module 4: **Global and National Policies**
Scope of Module: Explores the design, implementation, and evaluation of health and education policies.
Topics: Indian and Global Health and Education Policies- WHO and International Frameworks-Medical and Educational System Models Across Countries-Technology Assessment and Real-World Evidence-Fiscal Tools and Policy Intervention-Concept and objectives of Public-Private Partnerships (PPP)-Examples of PPP models in India. Medical Tourism and its role in national health policy
Learning Outcome: Critically evaluate national and global policy approaches to health and education.

No. of Hours:24

Module 5: **Emerging Issues and Reforms**
Scope of Module: Discusses contemporary challenges and reforms in the sectors.

Topics: Private and social health insurance-Universal health coverage models-Catastrophic health expenditure-Health financing reforms in India. Role of community-based health systems-Primary healthcare and wellness centers-Behavioural economics in preventive health. Equity and Inclusion in Education-Educational access gaps across gender, caste, and regions-Role of NEP 2020 in inclusive education-Use of ICT in bridging learning divides- Digital Health Tools and AI-enabled services - Use of EdTech and HealthTech solutions- Telemedicine and digital education platforms. Impact of environmental factors on health and education outcomes - Global Trends and Future Challenges
Learning Outcome: Examine critical and emerging challenges in the health and education sectors and analyze how innovative reforms and global frameworks address these issues for sustainable and inclusive development.

Module	No of Pre-Recordings
1	10
2	12
3	10
4	10
5	12

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Basic understanding of Principles of Micro and Macro Economics

Pedagogy / Teaching Methodology

- ✓ Discussion
- ✓ Case based learning
- ✓ Quiz

Certificate / Value Added Courses Recommended (with Free Resource Links):

1. https://onlinecourses.nptel.ac.in/noc24_hs154/preview

Suggested Readings:

Books:

- Culyer, A.J. & Newhouse, J.P. (2000). *Handbook of Health Economics*. Elsevier.
- Drèze, J. & Sen, A. (2013). *An Uncertain Glory: India and its Contradictions*. Penguin Books.
- Musgrave, R.A. & Musgrave, P.B. (1989). *Public Finance in Theory and Practice*. McGraw Hill.
- Tilak, J.B.G. (2002). *Education and Development: Lessons from the Asian Experience*. NIEPA.
- Arrow, K.J. (1963). *Uncertainty and the Welfare Economics of Medical Care*. American Economic Review.

Online Articles, Journals, and Whitepapers

- The Lancet – Global Health Series
- World Health Organization (WHO) – Reports on Global Health Expenditure
- OECD Health and Education Working Papers
- Indian Journal of Public Health
- NITI Aayog Policy Papers on Health and Education

Web-based Resources

- World Bank Health and Education Data Portal
- National Health Systems Resource Centre (NHSRC)
- Ministry of Health and Family Welfare, Government of India
- UNESCO Institute for Statistics – Education Data
- Global Health Observatory (WHO)

Recommended Software/Tools

- Stata / R / SPSS – for health and education data analysis
- WHO EPi Info – for basic epidemiological and statistical analysis in health economics
- NVivo – for qualitative data analysis of interviews and health education policies
- GIS Tools (QGIS/ArcGIS) – for spatial mapping of health/education indicators

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)
6	Indian Knowledge System

CO PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	3	-	3	-	2	-	-	3	-	-
CO2	2	2	-	3	-	2	-	-	2	-
CO3	-	2	2	-	-	3	2	-	2	3
CO4	2	-	3	2	2	-	-	2	-	2
CO5	-	3	-	2	2	-	2	-	3	2
Articulation	2.3	2.3	2.6	2.3	2	2.5	2	2.5	2.3	2.3

Course Title:	**Applied Monetary Economics**
Course Code:	**25VME3C404**
Semester:	**IV**
Credits:	**4**
Course Type	**Ability Enhancement Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description:

This course provides an advanced and applied understanding of the monetary system, monetary theory, and policy with an emphasis on contemporary issues, innovations, and global practices. It integrates classical and post-Keynesian theoretical frameworks with real-world applications such as digital finance, financial inclusion, inflation control, and responses to macroeconomic crises. The course is designed to develop students' analytical skills in evaluating monetary policies, financial institutions, and global monetary governance in a dynamic and evolving economic landscape.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

	Course Outcome	BTL
CO1	Analyze the multifaceted functions of money and its role in modern economic systems.	L4
CO2	Examine classical, Keynesian, and post-Keynesian theories of money demand, supply, and interest.	L4
CO3	Evaluate inflationary trends and analyze the mechanisms of monetary policy formulation and transmission.	L5
CO4	Investigate the transformation of banking and financial systems through digital innovation and policy interventions.	L4

CO5	Critically assess global financial architecture, recurring financial crises, and the evolving roles of international financial institutions.	L5

Course Module

No. of Hours:24

Module 1: **Theoretical Foundations of Money and Interest**
Scope of Module: Introduces foundational monetary theories and interest rate mechanisms in classical and Keynesian frameworks.
Topics: Origin, evolution, and functions of money: historical and theoretical context-Definitions and classifications of money: fiat money, near money, and electronic money-Gresham's Law and breakdown of the gold standard-Primary and secondary functions of money-Classical and Keynesian Theories of Money-Fisher's and Cambridge Approaches-Liquidity Preference and Real Balance Effect-Loanable Funds and Classical Theory of Interest
Learning Outcome: Assess the historical, theoretical, and functional underpinnings of money and interest rate determination.

No. of Hours:24

Module 2: **Modern Demand for Money and Monetary Policy**
Scope of Module: Covers modern money demand theories and contemporary monetary policy tools with a focus on India's policy shifts.
Topics: Post-Keynesian theories of money demand: Baumol's Inventory Model, Tobin's Portfolio Model, and Friedman's Restatement-Keynes's Theory of Interest and IS-LM Model implications-Tools of monetary policy: CRR, SLR, Repo, Reverse Repo, OMO, Bank Rate-Monetary policy transmission mechanisms: interest rate, exchange rate, credit, and expectations channels-Monetary targeting vs. inflation targeting-Recent monetary policy changes in India: post-liberalization, inflation

targeting regime, and post-pandemic shifts-Financial inclusion and direct benefit transfers (DBT)
Learning Outcome: Appraise the evolution of money demand theories and modern monetary policy tools and frameworks.

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No. of Hours:24

Module 3: **Financial Systems, Markets & Institutions**
Scope of Module: Explores the structure, functioning, and regulation of financial systems, markets, and institutions.
Topics: Structure of financial systems: organized vs. unorganized, formal vs. informal-Development and roles of NABARD, RRBs, IDBI, SIDBI, SFCs-Capital markets: primary vs. secondary markets, IPO mechanisms, SEBI regulations-Money market instruments: treasury bills, certificates of deposit, commercial paper-Role of SEBI and regulatory oversight-Financial intermediation, savings mobilization, and monetary transmission efficiency-Role of non-banking financial companies (NBFCs)
Learning Outcome: Analyze the components and operation of financial systems, markets, and key financial institutions.

No. of Hours:24

Module 4: **Contemporary Issues in Monetary Economics**
Scope of Module: Analyzes the impact of digitalization, FinTech, and microfinance on monetary systems and policy.

Topics:

Digital banking ecosystem in India: UPI, IMPS, NEFT, RTGS, E-wallets, CBDCs-Financial technology (FinTech) and innovations in payments-Role of microfinance institutions and SHGs: outreach, performance, and regulation-Jan Dhan Yojana: evolution, success, and integration with other schemes-Impact of COVID-19 on monetary policy and banking operations-Shadow banking system: structure, risk, and regulatory challenges-Central Bank Digital Currencies (CBDCs): opportunities and threats

Learning Outcome: Evaluate how technology and economic disruptions are reshaping monetary and financial systems.

No. of Hours:24

Module 5: **Global Monetary Architecture and Financial Crisis**

Scope of Module:

Examines global monetary institutions, policy coordination, and responses to financial crisis.

Topics:

Structure, function, and critique of International Monetary Fund (IMF), World Bank, and IBRD-Financial globalization and capital flow volatility-Currency crises and sovereign debt problems-Fiscal-monetary policy coordination in an open economy-Exchange rate regimes: fixed, flexible, and managed float systems-Global financial crises: 2008 Subprime crisis, 2013 taper tantrum, post-COVID recovery challenges-Global liquidity traps, monetary divergence, and international policy spillovers

Learning Outcome: Critically assess international monetary governance, policy coordination, and crisis management frameworks.

Module	No of Pre-Recordings
1	10
2	12
3	10
4	10
5	12

Prerequisites (If Any):

- Basic understanding of Money and economic indicators.

Pedagogy / Teaching Methodology:

- Blended learning
- Case based learning
- Quiz

Certificate/Value Added Course:

1. https://onlinecourses.swayam2.ac.in/imb25_mg79/preview

Suggested Readings:

Books:

- Mishkin, Frederic S. (2021). *The Economics of Money, Banking, and Financial Markets*. Pearson.
- Dornbusch, Rudiger, and Stanley Fischer. (2013). *Macroeconomics*. McGraw-Hill.
- Mankiw, N. Gregory. (2020). *Macroeconomics*. Worth Publishers.
- Bhole, L.M., and Jitendra Mahakud. (2021). *Financial Institutions and Markets*. McGraw-Hill.

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
2	Employability, Entrepreneurship and Skill Development
3	Value Added Courses (Module)
4	Integration of Digital Learning Tools
5	Crossing Cutting Edges (Ethics, Gender Equality, Sustainability and Environmental concerns)

6	Indian Knowledge System

CO PO Mapping Table

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3
CO1	3	-	3	-	-	-	-	3	-	-
CO2	3	2	-	2	-	-	-	-	2	-
CO3	2	-	2	3	-	3	-	2	-	-
CO4	-	2	3	-	3	-	2	-	3	2
CO5	2	3	-	2	2	2	-	-	2	3
Articulation	2.5	2.3	2.6	2.3	2.5	2.5	2	2.5	2.3	2.5

Course Title:	**Economics of Innovation and Digital Economy**
Course Code:	**25VME3C405**
Semester:	**IV**
Credits:	**4**
Course Type	**Skill Enhancement Course**
Learning Hours	**120**
Live Sessions	**12 hours**

Course Description:

This course offers an in-depth exploration of the economic foundations of innovation and the digital economy. It examines the role of technological change in economic growth, the dynamics of digital platforms and markets, and the economic implications of emerging technologies. Learners will analyze innovation systems, intellectual property regimes, and the transformative impact of digitalization on business models, labor markets, and global competition. The course equips students with critical tools to assess how innovation and digital disruption shape economic outcomes.

Course Outcomes (COs):

Upon successful completion of this course, learners will be equipped to:

	Course Outcome	BTL

CO1	Evaluate the theories and models of innovation economics.	L5
CO2	Analyze the impact of technological innovation on economic growth and productivity.	L4
CO3	Evaluate the role of digital platforms and new business models in modern economies.	L5
CO4	Examine the challenges and opportunities of digitalization for labor markets and economic inequality.	L4
CO5	Assess the policy responses to innovation-driven and digital economic transformations.	L5

Course Modules

No. of Hours:24

Module 1: **Foundations of Innovation Economics**
Scope of Module: Introduces key theories and models explaining innovation processes, technological advancement, and their economic impact.
Topics: Concept and types of innovation – Product, process, and organizational innovation. Theories of innovation: Schumpeterian dynamics, endogenous growth theory (Romer). Innovation systems: national, regional, and sectoral models. Role of entrepreneurship and knowledge spillovers. Measurement of innovation: patents, R&D intensity, and innovation indices.
Learning Outcome: Understand theoretical frameworks of innovation and assess their impact on economic development.

No. of Hours:24

Module 2: **The Digital Economy and Technological Transformation**

Scope of Module: Explores the structure, scope, and dynamics of the digital economy and technological disruption.
Topics: Defining the digital economy: characteristics and evolution. Digitization, and the rise of big data. Role of artificial intelligence, and IoT in reshaping industries. Network effects, platform economics, and the winner-takes-all phenomenon. Digital monopolies and competition challenges.
Learning Outcome: Analyze the features and economic implications of the digital economy and emerging technologies.

No. of Hours:24

Module 3: **Innovation, Growth, and Productivity**
Scope of Module: Focuses on the relationship between innovation, productivity gains, and long-term economic growth.
Topics: Innovation as a driver of total factor productivity (TFP) growth. Technology shocks. Creative destruction and structural change. Role of innovation in addressing market failures. Diffusion of innovation models and cross-country innovation gaps.
Learning Outcome: Evaluate how innovation influences productivity and economic growth dynamics.

No. of Hours:24

Module 4: **Digital Labour Markets and Economic Inequality**
Scope of Module: Analyzes how digital technologies reshape labor markets, skill requirements, and income distribution.
Topics: Impact of automation, AI, and robotics on employment structures. Rise of the gig economy and remote work. Digital skill gaps and labor market polarization. Digital divides across countries and communities. Policy responses: reskilling, universal basic income, and inclusive growth strategies.
Learning Outcome: Critically assess how digitalization affects labor markets, skills, and economic inequality.

No. of Hours:24

Module 5: **Innovation Policy, Regulation, and Future Challenges**
Scope of Module: Examines innovation policy frameworks, intellectual property rights, and global challenges in the digital economy.
Topics: Innovation policy instruments: subsidies, tax incentives, public R&D. Intellectual property regimes and patent systems. Competition policy in digital markets. Concepts of cybersecurity, data privacy, and digital ethics. Global digital governance initiatives. Sustainable innovation and the role of green technologies.
Learning Outcome: Appraise innovation and digital economy policies, regulatory challenges, and future global trends.

Module	No of Pre-Recordings
1	12
2	12
3	10
4	10
5	10

Note: Minimum number of pre-recordings is 10.

Prerequisites (If Any):

- Understanding of market structures, firm behavior, consumer choice, and externalities.
- Exposure to issues related to structural change, innovation, firm dynamics, and sectoral transformation.

Pedagogy / Teaching Methodology:

- ✓ Flipped Classroom
- ✓ Interactive class exercises
- ✓ Problem based learning

- ✓ Case Study approach and Real-world applications

Certificate / Value Added Courses Recommended (with Free Resource Links):

1. https://onlinecourses.nptel.ac.in/noc23_ec03/preview

Suggested Readings:

Books:

- Joseph Schumpeter – *Capitalism, Socialism and Democracy*, Routledge, 2010
- Mariana Mazzucato – *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*, Penguin, 2018
- Erik Brynjolfsson & Andrew McAfee – *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*, W.W. Norton & Company, 2014
- Jonathan Haskel & Stian Westlake – *Capitalism Without Capital: The Rise of the Intangible Economy*, Princeton University Press, 2018

Online Articles, Journals, and Whitepapers:

- OECD Reports – Innovation policy analysis and digital economy trends
- World Intellectual Property Organization (WIPO) – Global Innovation Index
- McKinsey Global Institute Reports – Technology, productivity, and future of work studies
- World Economic Forum – Reports on the Fourth Industrial Revolution

Web-based Resources:

- OECD iLibrary – Innovation and technology reports
- World Bank Digital Economy Databases
- European Commission's Digital Economy and Society Index (DESI)
- MIT Initiative on the Digital Economy

Recommended Software/Tools:

- Microsoft Excel / Tableau – For innovation and productivity data analysis
- Python / R – For basic analytics on digital economy datasets
- NVivo – For qualitative data analysis in innovation studies

Curriculum Development:

Sl.No	Identify and highlight in the module
1	Local, Regional, National and Global
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CO5	3	2	3	-	3	2	2	-	-	3
Articulation	2.5	2.7	2.5	2.2	2.5	2	2	2	2.3	2.5