Department of Economics

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

(Established by State Legislature Act 17 of 1995)

'A+' Grade, NAAC Accredited

Scheme of Examination for Integrated Five Years Programme
UG Four Years Programme (Single Major from First Semester)
Name of the Programme: Integrated B.Sc. (Hons/Hons with Research)-M.Sc. Economics
According to National Education Policy-2020
For Batch 2023-24 Onwards

FOURTH YEAR (SEMESTER-VII) B.Sc. (Hons/Hons with Research)-M.Sc. Economics							
Type of Course	**Course Code**	**Paper Nomenclature**	**Credits**	**Internal Marks**	**External Marks**	**Total Marks**	**Duration of Exam (Hrs.)**
Discipline Specific Courses (Core)	**24ECO0701T**	History of Economic Thoughts	04	30	70	100	3
	24ECO0702T	Quantitative Techniques	04	30	70	100	3
	24ECO0703T	International Economics-I	04	30	70	100	3
Discipline Specific Courses (Elective)	**24ECO0704T(i)** **Or** **24ECO0704T(ii)**	Environmental Economics Or Indian Growth and Development Or	04	30	70	100	3
Discipline Specific Courses (Practicum)	**24ECO0705P(i)** **Or** **24ECO0705P(ii)**	Practices of Indian Public Finance Or Applied Econometrics	04	30	70	100	2
Minor Course/ Vocational Course	**24MIC0704T(i)** **Or** **24MIC0704T(ii)** **Or** **24MIC0704T(iii)**	**To be opted from the University pool of MIC**	04	30	70	100	
Total			24	180	420	600	

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UG Four Years Programme (Single Major from First Semester

Name of the Programme: Integrated B.Sc. (Hons/Hons with Research)-M.Sc. Economics

According to National Education Policy-2020

For Batch 2023-24 Onwards

FOURTH YEAR (SEMESTER-VIII) B.Sc. (Hons.)-M.Sc. Economics							
Type of Course	**Course Code**	**Paper Nomenclature**	**Credits**	**Internal Marks**	**External Marks**	**Total Marks**	**Duration of Exam (Hrs.)**
Discipline Specific Courses (Core)	**24ECO0801T**	Economics of Growth	04	30	70	100	3
	24ECO0802T (i) **24ECO0802T (ii)**	Advances in Economic Theory Or Mathematics for Economic Analysis	04	30	70	100	3
	24ECO0803T	International Economics-II	04	30	70	100	3
Discipline Specific Courses (Elective)	**24ECO0804T(i)** **Or** **24ECO0804T(ii)**	Economics of Infrastructure Or Comparative Economic Development	04	30	70	100	3
Discipline Specific Courses (Practical)	**24ECO0805P(i)** **Or** **24ECO0805P(ii)**	Practices of Indian Trade and Investment Or Filed Survey and Report Writing	04	30	70	100	2
Minor Course/ Vocational Course	**24MIC0804T(i)** Or **24MIC0804T(ii)**	**To be opted from the pool of MIC**	04	30	70	100	3
Total			24	180	420	600	

OR

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Scheme of Examination for Integrated Five Years Programme
UG Four Years Programme (Single Major from First Semester
Name of the Programme: Integrated B.Sc. (Hons/Hons with Research)-M.Sc. Economics
According to National Education Policy-2020
For Batch 2023-24 Onwards

FOURTH YEAR (SEMESTER-VIII) B.Sc. (Hons. With Research)-M.Sc. Economics							
Type of Course	**Course Code**	**Paper Nomenclature**	**Credits**	**Internal Marks**	**External Marks**	**Total Marks**	**Duration of Exam (Hrs.)**
Discipline Specific Courses (Core)	**24ECO0801T**	Economics of Growth	04	30	70	100	3
	24ECO0802T (i) **24ECO0802T (ii)**	Advances in Economic Theory Or Mathematics for Economic Analysis	04	30	70	100	3
12 Credits Research Project/Dissertation							
Minor Course/ Vocational Course	**24MIC0804T(i)** Or **24MIC0804T(ii)**	**To be opted from the pool of MIC**	04	30	70	100	3
Total			24	90	210	300	

Note: For Students who opt B.Sc. (Hons. with Research) Economics; they need to opt (02 DSC Core+12 Credits Research Project/Dissertation) + MIC of 4 credits =24 Credits

Scheme of Examination for Integrated Five Years Programme
UG Four Years Programme (Single Major from First Semester
Name of the Programme: Integrated B.Sc. (Hons/Hons with Research)-M.Sc. Economics
According to National Education Policy-2020
For Batch 2023-24 Onwards

FOURTH YEAR (SEMESTER-VII)							
Department Courses offered for the pools (MIN/MDC/SEC, & VAC)							
Type of Course	**Course Code**	**Paper Nomenclature**	**Credits**	**Internal Marks**	**External Marks**	**Total Marks**	**Duration of Exam (Hrs.)**
Minor Course/ Vocational Course	**24MIC0704T(i)** **Or** **24MIC0704T(ii)** **Or** **24MIC0704T(iii)**	Economics for UPSC Aspirants Or Economics in One Lesson Or Economics and Law	04	30	70	100	3

FOURTH YEAR (SEMESTER-VIII)							
Department Courses offered for the pools (MIN/MDC/SEC, & VAC)							
Type of Course	**Course Code**	**Paper Nomenclature**	**Credits**	**Internal Marks**	**External Marks**	**Total Marks**	**Duration of Exam (Hrs.)**
Minor Course/ Vocational Course	**24MIC0804T(i)** Or **24MIC0804T(ii)**	Economics of Innovation Or Economics of Entrepreneurship	04	30	70	100	3

SEMESTER-VII

DSC-H1 (Core)

History of Economic Thoughts

Course Code: 24ECO0701T

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To understand the evolution of economic thought, classical, neo-classical, and Keynesian theories, and evaluate modern schools of economics, including supply-side theories and contributions of Nobel laureates.

Unit-I

Early Period Economic thoughts: Plato and Aristotle — Doctrines of Just cost and Just price, Economic thoughts of Kautilya, Valluvar; Indian economic thoughts: Naoroji, Gandhi- Village, Swadeshi, J.K. Mehta-Want lessness.

Unit–II

Mercantilism: main characteristics; Thomas Mun — Physiocracy: primacy of agriculture, taxation, Locke and Hume. Classical Period Adam Smith — division of labour, theory of value, capital accumulation, distribution, views on trade, economic progress; Thomas R. Malthus — theory of population, theory of gluts; Karl Marx - dynamics of social change, theory of value, surplus value, profit, and crisis of capitalism; Economic ideas of J.B. Say.

Unit–III

Neo-Classical and Keynesian Economic Thoughts: Marshall as a great synthesizer: role of time in price determination, Pigou: Welfare economics; Schumpeter: role of entrepreneur and innovations. Keynesian Ideas: the aggregate economy, underemployment equilibrium, role of fiscal policy, Friedman, Hayek.

Unit–IV

Neo-Classical synthesis, New Classical Economics: Market Clearing model, rational expectations and Lucas's critique, Supply Side Economics, Real Business Cycles, New Keynesian Economics, Economics of Nobel Laureates

Course Outcomes: At the end of the course, the students would be able to

CO1. Explain key economic ideas from early thinkers, classical economists, and Indian economic philosophers.
CO2. Assess the contributions of classical, neo-classical, and Keynesian economists to modern economic thought.
CO3. Critically evaluate contemporary economic theories, including rational expectations, real business cycles, and new Keynesian economics.

Suggested Readings List

1. Blaug, M. (1997), *Economic Theory in Retrospect: A History of Economic Thought from Adam Smith to J.M. Keynes* (5th Edition), Cambridge University Press, Cambridge.
2. Screpanti, E., & Zamagni, S. (2006), *An Outline of the History of Economic Thought*, Oxford University Press, Oxford.
3. Hunt, E.K., & Lautzenheiser, M. (2011), *History of Economic Thought: A Critical Perspective* (3rd Edition), PHI Learning, New Delhi.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-H2 (Core)

Quantitative Techniques

Course Code: 24ECO0702T

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To understand descriptive and inferential statistics, analyse optimization techniques in operations research, and evaluate advanced decision-making tools like Markov chains, simulations, and queuing models for practical applications.

Unit-I

Overview of Descriptive Statistics: Measures of Central Tendency and Dispersion, Skewness, and Kurtosis, Probability theory and probability distributions

Unit–II

Inferential Statistics: Hypothesis Testing (Z-test, t-test, Chi-square test, F-test), Regression and Correlation: Simple and Multiple Linear Regression, Rank Correlation, ANOVA, Time Series Analysis: Moving Averages, Exponential Smoothing, Trend Analysis.

Unit–III

Types of functions: linear, quadratic, exponential, logarithmic with economic applications, Limits and Continuity and its significance, Differentiation and its Economic Applications, Unconstrained and constrained Optimization.

Linear Algebra and Input-Output Analysis: Matrices and Determinants, Solving Systems of Linear Equations, Input-Output Analysis; Basic structure of Leontief's input-output model, Technology matrix and viability conditions, Uses in planning and policy-making.

Unit–IV

Operations Research & Optimization Techniques: Linear Programming: Graphical and Simplex Methods, Duality, Transportation and Assignment Problems: Hungarian Method, Vogel's Approximation.

Course Outcomes: At the end of the course, the students would be able to
CO1. Apply statistical methods for data analysis, hypothesis testing, regression modelling, and time series forecasting.
CO2. Develop analytical skills to solve optimization problems using linear programming, transportation, and assignment techniques.
CO3. Critically assess decision-making tools, including simulation techniques, Markov chains, and inventory management models for real-world applications.

Suggested Readings List

1. Taha, H.A. – *Operations Research: An Introduction*, 11th Edition, Pearson, 2021.
2. Hillier, F.S., & Lieberman, G.J. – *Introduction to Operations Research*, 2024 Release, McGraw-Hill.
3. Levin, R.I., & Rubin, D.S. – *Statistics for Management*, 7th Edition, Pearson, 1997.
4. Gupta, S.C., & Kapoor, V.K. – *Fundamentals of Mathematical Statistics*, 11th Edition, Sultan Chand & Sons, 2002.
5. Sharma, J.K. – *Operations Research: Theory and Applications*, 6th Edition, Macmillan, 2017.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-H3 (Core)

International Economics-I

Course Code: 24ECO0703T

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To understand international trade concepts and global economic issues, classical and modern trade theories, and evaluate trade policies, including tariffs, barriers, and protectionism.

Unit-I

International economics: introduction, international trade and Nation's standard of living, current international economic problems.

Unit-II

Trade theories: concept of international trade, basis for and gains from trade, trade based on Absolute Advantages, Comparative advantages, Comparative advantages and opportunity cost; standard theory of trade: production frontier with increasing costs, community indifference curve, equilibrium in isolation.

Unit-III

Factor endowments and Hecksher-Ohlin Theory: factor intensity, factor abundance, factor price equalization, and income distribution, Stopler Samuelson theorem, Leontief paradox; Modern trade theory: economies of scale, imperfect competition, product differentiation.

Unit-IV

International Trade Policy: Trade Restrictions; tariffs, partial equilibrium analysis of a tariff, theory of tariff structure, general equilibrium analysis of tariff in small country and large country, optimum tariff; non-tariff barriers: import quotas, other non-tariff barriers and new protectionism, political economy of protectionism.

Course Outcomes: At the end of the course, the students would be able to

CO1. Explain the role of international trade in economic development and assess trade theories in different economic contexts.

CO2. Develop analytical skills to examine factor endowment theories, income distribution effects, and the impact of trade restrictions.

CO3. Critically evaluate trade policies, tariff structures, and non-tariff barriers in shaping international economic relations.

Suggested Readings List

1. Jagdish N. Bhagwati (Ed.), "International Trade: Selected Readings," 2nd Edition, MIT Press, 1987.
2. Dominick Salvatore, "International Economics," 13th Edition, Wiley, 2019.
3. Charles P. Kindleberger, "International Economics," R.D. Irwin, Homewood.
4. Peter G. King, "International Economics and International Economic Policy: A Reader," McGraw-Hill International, Singapore.
5. Bo Sodersten, "International Economics," Macmillan Press Ltd, London.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-H4 (Elective:First Option)

Environmental Economics

Course Code: 24ECO0704T(i)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To understand the economy-environment interdependence and resource management, sustainability challenges and welfare economics, and evaluate resource allocation, environmental accounting, and optimal resource use.

Unit-I

An Introduction to Environmental Economics: Meaning of Natural Resources, Environment and Economics. The distinction between Environment, Natural Resources and Economics. Economy-environment interdependence. Chipko Movement, Narmada Bachao Movement.

Unit-II

Economic development and environment issues, Pollution flows, stocks, and damage, Pollution policy with imperfect information, Concepts of sustainability: economists on sustainability, Welfare economics and environment: efficiency and optimality, allocation in a market economy.

Unit-III

The environment and development trade-off and the concept of sustainable development. Environment Kuznets curve, Deforestation and environmental problems, Agriculture Development and Environmental problems.

Unit-IV

The efficient and optimal use of natural resources, a non-renewable resource two-period model, Environmental indicators, Environmental accounting: theory, The social welfare function and an optimal allocation of natural resources.

Course Outcomes: At the end of the course, the students would be able to
CO1. Explain the relationship between natural resources, environmental issues, and economic development.
CO2. Develop analytical skills to assess environmental policies, sustainability concepts, and the trade-offs in economic growth.
CO3. Critically evaluate resource management strategies, environmental indicators, and the role of environmental accounting in policy decisions.

Suggested Readings List

1. Field, B. C., & Field, M. K. (2021). *Environmental economics: An introduction* (8th ed.). McGraw Hill.
2. Tietenberg, T., & Lewis, L. (2019). *Environmental and natural resource economics* (12th ed.). Routledge.
3. Kolstad, C. D. (2011). *Environmental economics* (2nd ed.). Oxford University Press.
4. Hanley, N., Shogren, J. F., & White, B. (2019). *Introduction to environmental economics* (3rd ed.). Oxford University Press.
5. Perman, R., Ma, Y., Common, M., Maddison, D., & McGilvray, J. (2011). *Natural resource and environmental economics* (4th ed.). Pearson Education.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-H4 (Elective: Second Option)

Indian Growth and Development

Course Code: 24ECO0704T(ii)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To understand India's economic growth since independence, sectoral performance and development challenges, and evaluate macroeconomic policies impacting inclusive growth, poverty, and stability.

Unit-I

Economic Growth since Independence: Major features of the economy at independence; growth under different policy regimes—goals, constraints, institutions and policy framework; an assessment of performance—sustainability and regional contrasts; structural change, savings and investment

Unit-II

Sectoral Performances and Concerns: Issues in agriculture, industry and services.

Unit-III

Inclusive Growth - trends and patterns, Distributional Issues and Policies Demography, Poverty and Unemployment

Unit-IV

Economic Policies and their Impact: Evolution of macroeconomic framework applied in Indian economy and its impact, fiscal policy; financial and monetary policies; trade and investment policy, five-year plans.

Course Outcomes: At the end of the course, the students would be able to
CO1. Explain India's economic growth patterns, policy regimes, and regional disparities since independence.
CO2. Develop analytical skills to assess sectoral challenges, distributional issues, and trends in inclusive growth.
CO3. Critically evaluate the impact of fiscal, monetary, trade, and investment policies on India's economic development.

Suggested Readings List

1. Ahluwalia, M. S. (2019), "India's economic reforms: Achievements and Next Steps", Asian Economic Policy Review, 14(1), 46-62.
2. Bosworth, B., Collins, S. M., & Virmani, A. (2007). Sources of growth in the Indian economy. Working Paper no. 12901, NBER.
3. Krishnamurty, K. (2002), Macroeconometric Models for India: Past, Present and Prospects Economic and Political Weekly, October 19, 2002.
4. Arvind Subramanian and Josh Felman (2021) India's Stalled Rise-How the State Has Stifled Growth, Foreign Affairs on 14.12.2021.
5. Shah, Mihir (2007), Rural Credit in 20th Century India: Overview of History and Perspectives, Economic and Political Weekly, Vol. 42, Issue No. 15 , 14 April 2007.
6. Chanda, R. (2019), India's Services Sector; trends, opportunities and challenges, in Uma Kapila(ed.), Indian economy-2: Macroeconomic policies, Sectoral Developments and Performance.
7. Jagdish Bhagwati and Arvind Panagariya, (2012), India's Tryst with Destiny, Collins Business, Noida, pp. 4-5, 32-38.
8. Panagariya A (2020), India Unlimited: Reclaiming the Lost Glory, Chapter 2.
9. Jean Dreze and Amartya Sen, (2013), India: An Uncertain Glory, Allen Lane, chapters 2, 3 (pp. 72-80 only).
10. Kumar, R., & Patibandla, M. (2009). Institutional dynamics and the evolution of the Indian economy, Springer.
11. Goyal, A. (Ed.). (2019). A Concise Handbook of the Indian Economy in the 21st Century. Oxford University Press.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-H5 (Practicum: First Option)

Practices of Indian Public Finance

Course Code: 24ECO0705P(i)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Practical)**
External Assessment: 70

Course Objectives: To understand public finance and fiscal federalism in India, taxation, fiscal policy, and debt management, and evaluate social sector expenditure, subsidies, and global public finance trends.

Unit-I

Budget Analysis and Interpretation: Hands-on examination of Union and State Budgets; decoding budget documents, trends, and classifications.

Unit-II

Taxation Practices in India: Practical analysis of direct and indirect tax structures, GST filing procedures, and tax return simulations.

Unit-III

Public Debt and Deficit Management: Analysis of fiscal deficit trends; practical use of FRBM data and public debt sustainability indicators.

Unit-IV

Performance and Outcome Budgeting: Hands-on work with performance budgeting documents; tracking outputs and outcomes of select public programs.

Course Outcomes: At the end of the course, the students would be able to

CO1. Explain the role of public finance in economic development, fiscal federalism, and budgetary processes in India.
CO2. Develop analytical skills to assess taxation policies, fiscal reforms, deficit financing, and debt sustainability.
CO3. Critically evaluate social sector spending, monetary-fiscal coordination, and global public finance practices using data-driven analysis.

Suggested Readings List

1. Government of India, Ministry of Finance – *Union Budget Documents*
2. Rao, M. Govinda & Tapas Sen (1996). *Fiscal Federalism in India: Theory and Practice*
3. Comptroller and Auditor General of India (CAG) Reports – Selected Performance and Outcome Audits
4. Kelkar, Vijay et al. (2012). *Report of the Committee on Roadmap for Fiscal Consolidation*

NOTE: Practical Examination will be Taken by External Examiner

DSC-H5 (Practicum: Second Option)

Applied Econometrics

Course Code: 24ECO0705P(ii)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Practical)**
External Assessment: 70

Course Objectives: To understand empirical research steps and econometric modelling using Stata or R, analyze regression diagnostics and model specification issues, and evaluate cross-section, time series, and panel data techniques with applications in Indian statistics.

Unit-I

Steps in empirical research: Use of econometric models in empirical research – some basic concepts, The basic commands in Stata / R

Unit-II

Regression Diagnostics and Specification: Misspecification, Functional forms, Model selection, Application with Stata / R

Unit-III

Application of Regression Analysis: Cross section analysis – Linear regression model with two regressors (by using survey data like NSSO with Stata / R), Time series analysis (very preliminary level) – Basic concepts of time series, estimating linear trend (by using NAS with Stata / R), Panel data analysis – basic concepts of fixed effects model; random effects model – (Application with Indian Official Statistics using Stata / R).

Unit-IV

Introduction to Econometric Software (EViews/ R /Stata: ANY ONE): Generation of data sets and data transformation; data analysis (Graphs and Plots, Summary Statistics, Correlation Matrix etc.), Running an OLS regression; Testing for Linear Restrictions and Parameter Stability, Regression Diagnostics: Collinearity, Autocorrelation, Heteroscedasticity, Normality of residuals, Estimation of Other Linear Models: Weighted Least squares, Cochran-Orcutt/ Hildreth Lu/ Prais-Winsten etc. v. Model Selection Criteria (AIC, SIC) and Tests (Adding and Omitting Variables, non-linearities: Squares, Cubes and Logs, Ramsey's RESET test)

Course Outcomes: At the end of the course, the students would be able to
CO1. Apply econometric models, use basic commands in Stata or R, and conduct empirical research.
CO2. Develop analytical skills to perform regression diagnostics, identify model specification errors, and select appropriate functional forms.
CO3. Critically assess econometric techniques for cross-section, time series, and panel data analysis using real-world datasets and software applications.

Suggested Readings List

1. Christopher F. Baum, (2006), An Introduction to Modern Econometrics Using Stata, Stata Press

2. Maddala, G. S. (2002), Introduction to Econometrics, Macmillan Publishing Company

3. Wooldridge, Jeffrey M. (2013), Introductory Econometrics – A Modern Approach, CENGAGE learning

4. Hamilton L. Statistics with Stata References STATA USER'S GUIDE RELEASE 13, https://www.stata.com/manuals13/u.pdf

NOTE: Practical Examination will be Taken by External Examiner

MIC 7 (First Option)

Economics for UPSC Aspirants

Course Code: 24MIC0704T(i)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To understand economic concepts and national income, India's growth, sectoral contributions, and reforms, and evaluate monetary and fiscal policies, trade theories, exchange rates, and global economic trends.

Unit-I

Basic Concepts: Demand & Supply, Elasticity, Opportunity Cost, Production & Cost Analysis, Types of Economic Systems: Capitalism, Socialism, Mixed Economy, National Income: GDP, GNP, NNP, NDP (Real vs. Nominal GDP), Methods of Measuring National Income: Income, Expenditure, and Production Approach, Circular Flow of Income

Unit-II

Features of the Indian Economy: Demographic Trends, Sectoral Contribution, Economic Planning in India: Five-Year Plans & NITI Aayog, Inclusive Growth and Sustainable Development, Economic Reforms Since 1991: Liberalization, Privatization, Globalization (LPG), Government Schemes & Initiatives (PM-KISAN, Atmanirbhar Bharat, Make in India)

Unit-III

Functions of Money: Money Supply (M1, M2, M3, M4), Inflation: Causes, Effects, and Control Measures (CPI, WPI, Core Inflation), Banking System in India: Structure, Functions, and Role of RBI (Monetary Policy), Fiscal Policy: Budgeting, Types of Deficits, FRBM Act, Taxation: Direct & Indirect Taxes, GST, Tax Reforms in India

Unit-IV

International Trade Theories & WTO, Balance of Payments (BoP): Components, Deficit & Surplus, Exchange Rates: Fixed vs. Floating, Forex Reserves, Trade Agreements: FTA, RCEP, SAFTA, BRICS & Globalization Impact, Recent Economic Developments & Reports (World Bank, IMF, WEF)

Course Outcomes: At the end of the course, the students would be able to
CO1. Explain key economic principles, national income accounting, and different economic systems.
CO2. Develop analytical skills to assess India's economic reforms, banking system, taxation policies, and inflation control measures.
CO3. Critically evaluate international trade policies, balance of payments, exchange rate mechanisms, and recent global economic trends.

Suggested Readings List

1. Mishra & Puri (2022). *Indian Economy.* Himalaya Publishing House.
2. Ramesh Singh (2023). *Indian Economy.* McGraw Hill Education.
3. Uma Kapila (2023). *Indian Economy: Performance and Policies.* Academic Foundation.
4. Datt & Sundaram (2022). *Indian Economy.* S. Chand Publishing.
5. N. Gregory Mankiw (2020). *Principles of Economics.* Cengage Learning.
6. IMF & WTO Reports on Global Economy

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

MIC 7 (Second Option)

Economics in One Lesson

Course Code: 24MIC0704T(ii)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To understand economic principles like incentives and transaction costs, institutions and market mechanisms, and evaluate economic progress and the government's role in competition, rights protection, and public goods provision.

Unit-I

Key Elements of Economics-I, Incentives matter, No Free Lunch, Decisions Are Made at the Margin, Trade and Investment brings prosperity, Transaction Costs are costly, Profits is good.

Unit-II

Key Elements of Economics-II, Benevolence is beneficial, Better Ways of Doing Things, and Sound Economic Institutions, The *Invisible Hand* of Market Criticality of Sound Economic Institutions. Unintended and long-term consequences need deeper look.

Unit-III

Major Sources of Economic Progress, Contract enforcement ensures prosperity, Competition is key to low cost and Innovations, Inflation distort Prices, High taxes may lead to low yield to government, Free Trade is beneficial!

Unit-IV

Economic Progress and the Role of Government: the protector of Individuals Rights Government: the provider of public goods, the costs of government are not only taxes, Governments can be captured by Special-Interest Groups, Government try to help some people at the expense of others. Competition is equally important for government.

Course Outcomes: At the end of the course, the students would be able to
CO1. Explain key economic concepts such as incentives, trade, competition, and institutional frameworks.
CO2. Develop analytical skills to assess the impact of inflation, taxation, contract enforcement, and economic policies on growth.
CO3. Critically evaluate the role of government in economic progress, addressing market failures, public goods provision, and special-interest influence.

Suggested Readings List

1. Economics in One Lesson' by Henry Hazlitt, Ludwig von Mises Institute Auburn, Alabama. 2008.
2. 'Economics For Dummies', by Sean Masaki Flynn, 3rd Edition Published by: John Wiley & Sons, 2018
3. 'Economics made simple' by Whitehead, Geoffrey, Publisher: W.H. Allen London, 1973.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal mark.

MIC 7 (Third Option)

Economics and Law

Course Code: 24MIC0704T(iii)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: The Course aims to explore understanding the intersection of law and economics, including legal efficiency, property rights, and transaction costs.

Unit-I

Meaning, Scope, and Significance of Law and Economics, Economic Analysis of Legal Systems, Efficiency and the Role of Law: Pareto Efficiency, Kaldor-Hicks Criterion, Coase Theorem and Property Rights, Role of Transaction Costs in Legal and Economic Interactions

Unit-II

Concept of Property Rights and Ownership, Intellectual Property Rights (IPR) and Economic Growth, Contract Law and Economic Efficiency, Elements of a Valid Contract, Bargaining and Contract Enforcement, Principal-Agent Problem and Contract Design, Market Failures, Externalities, and the Role of Legal Institutions

Unit-III

Role of Government in Market Regulation, Anti-Competitive Practices and Competition Law, Monopoly, Oligopoly, and Economic Regulation, Consumer Protection Laws and Economic Implications, Labour Laws and Economic Growth

Unit-IV

Economic Analysis of Crime and Punishment, Deterrence Theory and Optimal Law Enforcement, Cost-Benefit Analysis of Crime Prevention, Tort Law and Liability Rules, Strict Liability vs. Negligence, Compensation and Deterrence, Legal Institutions and Economic Development, Judiciary, Corruption, and Economic Growth, Law as an Instrument of Economic Policy

Course Outcomes: At the end of the course, the students would be able to

CO1. Explain key legal and economic principles, including efficiency criteria, property rights, and contract enforcement.
CO2. Develop analytical skills to assess market regulations, competition laws, and the economic impact of legal institutions.
CO3. Critically evaluate crime deterrence, liability rules, and the role of law in shaping economic policies and growth.

Suggested Readings List

1. Cooter, R., & Ulen, T. (2016). *Law and Economics* (6th ed.). Pearson.
2. Posner, R.A. (2014). *Economic Analysis of Law* (9th ed.). Wolters Kluwer.
3. Shavell, S. (2004). *Foundations of Economic Analysis of Law*. Harvard University Press.
4. Miceli, T.J. (2017). *The Economic Approach to Law* (3rd ed.). Stanford University Press.
5. Polinsky, A.M. (2018). *An Introduction to Law and Economics* (5th ed.). Wolters Kluwer..

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

Semester-VIII

DSC-H6 (Core)

Economics of Growth

Course Code: 24ECO0801T

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To understand economic growth theories and their long-term implications, the role of technology, institutions, and structural change, and evaluate growth, inequality, and sustainability for inclusive development.

Unit -I

Introduction to Growth Theories: Harrod-Domar Growth Model: Assumptions, instability, knife-edge problem; Solow-Swan Growth Model: Capital accumulation, steady-state, golden rule of savings**;** Convergence Hypothesis: Absolute vs. conditional convergence, empirical evidence**;** Role of population growth and technological progress in long-run growth

Unit- II

Endogenous Growth and Technological Change: Endogenous Growth Theory: AK model and the role of knowledge accumulation**;** Romer's Model of Knowledge Spill-overs and R&D-based growth models**;** Schumpeterian Growth: Innovation, creative destruction, and productivity**;** The role of human capital, institutions, and policy in technological progress

Unit- III

Growth, Institutions, and Structural Change: Institutional Determinants of Growth: Theories of North, Acemoglu & Robinson; Governance, property rights, corruption, and economic development; Lewis Model of Dual Economy: Migration, labour shifts, and policy challenges; Structural Transformation: Industrialization, service sector growth, and informality

Unit- IV

Growth, Inequality, and Sustainability: Kuznets Curve: Empirical validity, critiques, and policy relevance; Inclusive Growth: Social and economic dimensions, redistributive policies; Environmental Constraints to Growth: Green growth models, limits to growth; Sustainable Development Goals (SDGs) and economic growth strategies

Course Outcomes: At the end of the course, the students would be able to
CO1. Explain classical and modern growth theories, their assumptions, and empirical relevance.
CO2. Develop analytical skills to assess the impact of technological progress, human capital, and institutional factors on economic growth.
CO3. Critically evaluate the interplay between economic growth, inequality, and sustainability, applying relevant policy frameworks and SDGs.

Suggested Readings List

1. Barro, R. & Sala-i-Martin, X. (2003). *Economic Growth* (2nd ed.). MIT Press.
2. Aghion, P. & Howitt, P. (2009). *The Economics of Growth.* MIT Press.
3. Acemoglu, D. & Robinson, J. (2012). *Why Nations Fail: The Origins of Power, Prosperity, and Poverty.* Crown Business.
4. Weil, D. (2013). *Economic Growth* (3rd ed.). Pearson.
5. Todaro, M. & Smith, S. (2020). *Economic Development.* Pearson.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-H7 (Core) (Option-i)

Advances in Economic Theory

Course Code: 24ECO0802T (i)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To provide a comprehensive understanding of modern developments in micro and macroeconomic theory and their applications in economic analysis.

Unit-I

Advanced Microeconomic Foundations: Consumer Theory: Intertemporal choice, revealed preference, duality Production Theory: Cost functions, profit maximization, duality in production General Equilibrium: Existence, uniqueness, and stability of equilibrium Welfare Economics: First and second welfare theorems, social welfare functions

Unit–II

Game Theory and Strategic Behaviour: Static and dynamic games of complete information, Games of incomplete information: Bayesian games Repeated games and evolutionary game theory, Applications in oligopoly, auctions, and bargaining

Unit–III

Uncertainty, Risk, and Information: Expected utility theory and risk aversion Insurance markets, moral hazard, and adverse selection Market signalling and screening Contract theory and principal-agent problems.

Unit–IV

Contemporary Macroeconomic Theory: Intertemporal macroeconomics: consumption and investment under uncertainty Overlapping generations (OLG) models, Real Business Cycle (RBC) theory, New Keynesian Economics: Sticky prices, DSGE models, Policy implications of modern macro models

Course Outcomes: At the end of the course, the students would be able to:
CO1. Understand advanced concepts in consumer and producer theory, general equilibrium, and welfare economics.
CO2. Analyze intertemporal choices, uncertainty, and strategic interactions using game theory.
CO3. Apply contemporary macroeconomic models to evaluate dynamic economic problems and policies.

Suggested Readings List:

1. Mas-Colell, A., Whinston, M.D., & Green, J.R. (1995). *Microeconomic Theory*. Oxford University Press.
2. Kreps, D.M. (1990). *A Course in Microeconomic Theory*. Princeton University Press.
3. Gibbons, R. (1992). *Game Theory for Applied Economists*. Princeton University Press.
4. Varian, H.R. (2014). *Microeconomic Analysis* (3rd ed.). W.W. Norton & Company.
5. Ljungqvist, L., & Sargent, T.J. (2018). *Recursive Macroeconomic Theory* (4th ed.). MIT Press.
6. Romer, D. (2018). *Advanced Macroeconomics* (5th ed.). McGraw-Hill Education.
7. Salanié, B. (2017). *The Economics of Contracts: A Primer* (2nd ed.). MIT Press.
8. Osborne, M.J. (2004). *An Introduction to Game Theory*. Oxford University Press.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-H7 (Core) (Option-ii)

Mathematics for Economic Analysis

Course Code: 24ECO0802T (ii)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: The objective of this paper is to train the students to master the techniques of mathematics that are commonly applied to understand and analyse economic problems.

Unit -I

Preliminaries: Elements of logic and proof – converse and contra positive, necessary and sufficient conditions – proof by contradiction – mathematical induction – sets and set operations –ordered pairs, Cartesian products of sets – relations functions, one to one and onto functions, composite functions, the inverse function – the real numbers, natural numbers, integers, rational and irrational numbers – absolute value and intervals –inequalities.

Unit -II

Elementary Linear Algebra: Two, three and n – dimensional row and column vectors – vector addition and scalar multiplication – length of a vector, scalar products, orthogonality – geometric representation, lines and planes in R2 and R3 – linear and convex combinations of vectors – linear independence – convex sets.

Unit -III

Matrices and Matrix Operations: Addition, scalar multiplication, matrix multiplication – the transpose – the inverse of a square matrix – rank, elementary row operations and computation of rank– invertibility and rank for square matrices, characteristic roots and eigen values, Cramer rule.

Unit -IV

Determinants: Determinants – definition, properties, minors and cofactors – the Laplace expansion –expansion by alien cofactors – singularity and invertibility –the adjoint matrix and formula for the inverse.

Course Outcomes: At the end of the course, the students would be able to
CO1. Understand and apply basic logical and set-theoretic foundations essential for mathematical reasoning in economics.
CO2. Analyze and solve problems involving vectors, matrices, linear systems, and determinants with economic applications.
CO3. Interpret and use mathematical structures like functions, linear algebra, and proofs to develop and validate economic models.

Suggested Readings List

1. Knut Sydsaeter and Peter J. Hammond (2002), Mathematics for Economic Analysis. Pearson Educational Asia:
2. Delhi (reprint of 1st 1995 edition).
3. Alpha C. Chiang (1984), Fundamental Methods of Mathematical Economics. McGraw Hill (3rd edition).
4. Hadley, G. (1987), Linear Algebra, Addison-Wesley.
5. Metha B.C. and Madnani. GMK (2004), Mathematics for Economists, Sultan Chand & Sons, New Delhi.

Examiner's Note: The course contents of the courses, having 04 credits, will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory, consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more questions will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-H8 (Core)

International Economics-II

Course Code: 24ECO0803T

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To understand exchange rate theories and systems, factors affecting exchange rates and trade policies, and evaluate contemporary issues in international trade, economic integration, digital trade, and multinational corporations.

Unit-I

Theories of exchange rate determination: Purchasing Power Parity (PPP), Interest Rate Parity (IRP), and the Asset Market Approach, fixed vs. flexible exchange rate systems

Unit-II

Factors influencing exchange rates in the short and long run, Exchange rate interventions and their effectiveness, Currency crises: causes and consequences.

Unit-III

Trade policies of major economies and their global impact, Contemporary issues in international trade: trade wars, protectionism, and globalization backlash, Economic integration: customs unions, free trade areas, and common markets, World Trade Organization (WTO): principles, agreements, and dispute settlement

Unit-IV

Global value chains and their implications for trade and development, Trade and environmental sustainability, Digital trade and the impact of technology on international economics, Labor migration and its economic effects, The role of multinational corporations in the global economy.

Course Outcomes: At the end of the course, the students would be able to
CO1. Explain exchange rate theories, interventions, and their implications for international finance.
CO2. Develop analytical skills to assess trade policies, economic integration mechanisms, and challenges in global trade.
CO3. Critically evaluate global value chains, digital trade, environmental sustainability, and the economic effects of labor migration.

Suggested Readings List

1. Bhagwati, J. (Ed.) – *International Trade: Selected Readings* (2nd Edition, 1987), MIT Press, Cambridge, Massachusetts.
2. Kindleberger, C.P. – *International Economics* (7th Edition, 1987), R.D. Irwin, Homewood.
3. King, P.G. – *International Economics and International Economic Policy: A Reader* (5th Edition, 2005), McGraw-Hill International, Singapore.
4. Salvatore, D. – *International Economics* (13th Edition, 2020), Wiley, New York.
5. Södersten, B.O., & Reed, G. – *International Economics* (3rd Edition, 1994), Macmillan Press Ltd, London.
6. Reinert, K.A. – *An Introduction to International Economics: New Perspectives on the World Economy* (2nd Edition, 2020), Cambridge University Press.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-H9 (Elective: First Option)

Economics of Infrastructure

Course Code: 24ECO0804T(i)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To understand infrastructure's role in economic development, economic principles in transportation, energy, and telecommunications, and evaluate pricing strategies, demand factors, and policy challenges in utilities and energy resources.

Unit-I

Infrastructure and economic development– Infrastructure as a public good; Social and physical infrastructure; Special characteristics of public utilities. The peak load, Off load problem; Dual principal controversy; Economies of scale of joint supply; Marginal cost pricing vs. other methods of pricing in public utilities; Cross subsidization – free prices, equity and efficiency.

Unit-II

The structure of transport costs and location of economic activities; Demand for transport – Models of freight and passenger demand; Model choice; Cost functions in the transport sector; Principle of pricing; Special problems of individuals modes of transport; Inter-model condition in the Indian situation.

Unit-III

Rate making in telephone utilities; Principles of decreasing costs in telephone industry –Measurement of standards of service in telephone and postal utilities.

Primacy of energy in the process of economic development; Factors determining demand for energy; Effects of energy shortages; the search for an optimal energy policy in the Indian context.

Unit-IV

Bulk supply and pricing of electricity – The relative economics of thermal, hydel and nuclear power plants – The case for a National Power Grid, financing water utilities - Urban and rural water supply; The exploitation of National Gas; Pricing problem.

Course Outcomes: At the end of the course, the students would be able to
CO1. Explain the significance of infrastructure as a public good and its contribution to economic growth.
CO2. Develop analytical skills to assess pricing principles, cost structures, and policy challenges in transport, energy, and communication sectors.
CO3. Critically evaluate infrastructure financing, energy policies, and optimal strategies for managing public utilities in India.

Suggested Readings List

1. National Council of Applied Economic Research – *India Infrastructure Report: Policy Implications for Growth and Welfare* (Latest Report), New Delhi.
2. Parikh, K.S. (Ed.) – *India Development Report* (1997), Oxford University Press, New Delhi.
3. Crew, M.A., & Kleindorfer, P.R. – *Public Utility Economics* (1979), Macmillan, New York.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-H9 (Elective: Second Option)

Comparative Economic Development

Course Code: 24ECO0804T(ii)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To understand the economic development of major economies, key growth drivers in agriculture, industry, and technology, and evaluate state intervention and lessons for India from global growth experiences.

Unit-I

Economic Development of Britain: Basic features of British Economy and Trends (Industrial Revolution, Transport and Communication)

Economic Development of USA: Basic features of US Economy and Trends (infrastructure, trade), Role of USA in world economic cooperation; Indo-US economic cooperation.

Unit-II

Economic Development of Japan: Agriculture, Industry; role of entrepreneurship; and technology.

Economic development of China: Agriculture, Industry and Trade; Cultural Revolution; and Economic reforms.

Unit-III

Economic Development of USSR: Basic Features of USSR economy, Industry & Trade, Indo – USSR economic Cooperation, Glasnost, Prestorika & Disintegration of USSR economy.

Growth miracle of Newly Industrialised countries: Taiwan, South Korea, and Singapore.

Unit-IV

Role of State in economic development (regulatory and developmental role): USA, USSR, China and Japan, Lesson for India from the growth experience of these countries.

Course Outcomes: At the end of the course, the students would be able to

CO1. Explain the economic transformations of Britain, the USA, Japan, China, and the USSR, along with their global economic roles.

CO2. Develop analytical skills to assess industrialization, entrepreneurship, trade policies, and economic reforms in leading economies.

CO3. Critically evaluate state-led development strategies, regulatory policies, and their applicability to India's economic growth.

Suggested Readings List

1. W.H.B. Court – *A Concise Economic History of Britain: From 1750 to Recent Times*, 2nd Edition, Cambridge University Press, 1965.
2. Roderick Floud and Donald McCloskey (Eds.) – *The Economic History of Britain since 1700*, 2nd Edition, Cambridge University Press, 1994.
3. Stuart Kirby – *An Introduction to the Economic History of China*, Routledge, 1954.
4. Maurice Dobb – *Soviet Economic Development Since 1917*, 6th Edition, Routledge & Kegan Paul, 1972.
5. W.W. Lockwood – *The Economic Development of Japan: Growth and Structural Change, 1868-1938*, Expanded Edition, Princeton University Press, 1966.
6. Chalmers Johnson – *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975*, Stanford University Press, 1982.
7. Alec Nove – *An Economic History of the USSR: 1917-1991*, 3rd Edition, Penguin Books, 1992.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-H10 (Practicum: Option-i)

Practices of Indian Trade and Investment

Course Code: 24ECO0805P(i)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Practical)**
External Assessment: 70

Course Objectives: To understand India's trade evolution, balance of payments, and foreign exchange management, analyze trade policies, agreements, and sectoral performance, and evaluate future strategies, digital trade, sustainability, and geopolitical impacts.

Unit-I

Case Study: India's Export and Import Trends (1991-Present), Trade Data Analysis using RBI and Ministry of Commerce Databases

Unit–II

Comparative Analysis: India's FTA with ASEAN vs. EU, Policy Evaluation: India's Trade Response to WTO Disputes

Unit–III

Industry Report: Export Potential of an Emerging Indian Sector, Field Visit: Interaction with Exporters and Industry Experts (Optional)

Unit–IV

Analysis of Policy Recommendation Reports: India's Strategy to Boost Exports by 2030, Data-Driven Analysis: India's Trade Performance Post-Pandemic

Course Outcomes: At the end of the course, the students would be able to

CO1. Explain India's trade trajectory, key trading partners, sectoral contributions, and global trade rankings.

CO2. Develop analytical skills to assess trade policies, agreements, and challenges in India's export-import landscape.

CO3. Critically evaluate policy recommendations, future trade strategies, and India's integration into the evolving global trade system.

Suggested Readings List

1. Bhagwati, J., & Panagariya, A. (2013). *India's Tryst with Destiny*. HarperCollins.
2. Ministry of Commerce & Industry, Government of India (Annual Reports).
3. RBI Handbook on *India's Balance of Payments*.
4. Krueger, A. O. (2002). *Trade Policy and Economic Development: How We Learn*. Oxford University Press.
5. Ministry of Commerce (2023). *Foreign Trade Policy 2023-2028*.
6. WTO Reports on India's Trade Policy Reviews.
7. Panagariya, A. (2010). *India: The Emerging Giant*. Oxford University Press.
8. Economic Survey of India (Trade and Industry Chapters).
9. NITI Aayog Reports on MSME Trade Growth.

NOTE: Practical Examination will be Taken by External Examiner

DSC-H10 Practicum (Option-ii)

Field Survey and Report Writing

Course Code: 24ECO0805P(ii)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Practical)**
External Assessment: 70

Course Objectives: To develop practical skills in designing, conducting field surveys, and preparing structured analytical reports on socio-economic issues.

Unit–I

Introduction to Field Survey and Research Design: Significance of field surveys in applied economics**,** framing research questions and objectives**,** Hypothesis formation and selection of appropriate design**,** Sampling techniques: random, stratified, cluster, purposive**,** Ethical issues in field research
Practical Component: Identify a local economic issue and frame 1–2 research questions**,** Prepare a brief research design and sampling strategy for the selected topic**,** Conduct a role-play exercise on ethical dilemmas in field surveys

Unit II

Questionnaire Design and Pre-Testing: Types of survey questions: open-ended, close-ended, Likert-scale**.** Dos and don'ts in questionnaire design**,** Techniques of pre-testing and refining questions**,** Introduction to digital survey tools (Google Forms, Kobo Toolbox, SurveyCTO, ODK)
Practical Component: Draft a complete survey questionnaire on a selected economic topic**,** Pre-test the questionnaire with 5–10 individuals and revise based on feedback**,** Digitize the questionnaire using an online platform

Unit III

Data Collection, Management, and Analysis: Fieldwork planning: logistics, scheduling, and team management**.** Data collection methods: interviews, FGDs, observations**.** Data cleaning, validation, and management**.** Basic analysis using Excel/SPSS/Stata/R: frequency tables, cross-tabs, descriptive statistics

Practical Component: Conduct a small-scale survey (minimum 30 responses)**,** Enter and clean the data in Excel or statistical software**,** Perform basic descriptive analysis and interpret key results

Unit IV

Report Writing and Presentation: Elements of a good field report: introduction, methodology, findings, interpretation, conclusion**,** Using charts, tables, and graphs effectively**.** Citing data sources and referencing formats**,** Presenting findings to academic and non-academic audiences
Practical Component: Write a structured field report based on collected data**,** Prepare and present findings using PowerPoint/Google Slides**,** participate in a peer review session and revise the report accordingly

Course Outcomes: At the end of the course, the students would be able to
CO1. Students will gain practical exposure to field-level data collection, sampling, and survey design.

CO2. They will develop hands-on skills in using data analysis tools and organizing primary datasets.

CO3. Students will learn to write structured and policy-relevant field reports with empirical insights**.**

Suggested Readings List:

1. Kumar, R. (2023). *Research Methodology: A Step-by-Step Guide for Beginners* (6th ed.). SAGE Publications.
2. Bailey, K. D. (2021). *Methods of Social Research* (5th ed.). Free Press.
3. Groves, R. M., Fowler, F. J., Couper, M. P., et al. (2022). *Survey Methodology* (3rd ed.). Wiley.
4. Babbie, E. (2020). *The Practice of Social Research* (15th ed.). Cengage Learning.
5. Dey, I. (2019). *Qualitative Data Analysis: A User-Friendly Guide for Social Scientists*. Routledge.
6. UNICEF MICS Manual and World Bank LSMS Guidelines – for field manuals and templates (available online)

NOTE: Practical Examination will be Taken by External Examiner

MIC 8 (First Option)

Economics of Innovation

Course Code: 24MIC0804T(i)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To understand the nature and models of innovation, its measurement, diffusion, and economic impact, and evaluate policy instruments, market structures, and global frameworks shaping innovation and R&D.

Unit-I

Introductory topics: Nature and importance of innovation- Invention- Innovation- Incremental innovation- innovation in the context of developing countries- radical and disruptive innovations and user led innovations. Conceptualization of Innovation: Linear versus Chain-linked models. Meaning of national systems of innovation in the context of globalisation- Sectoral and Regional systems of Innovation: explanation of why one sector/region is more innovative than another one.

Unit-II

Measuring Innovation: Conventional vs new indicators - Composite measures of innovation, Understanding the process of diffusion of innovations in an economy: Estimating the relationship between diffusion of innovation and economic growth in a nation – the concept of total factor productivity (TFP).

Unit-III

Policy instruments to stimulate generation of innovation and diffusion of innovations: Financial instruments (R&D tax incentives, Research Grants, Loans and Venture Capital) - Non financial instruments (Supply of human resource in science and engineering, industrial standards and clustering) - Measuring the effectiveness of innovation policy instrument.

Unit-IV

Market structure and Innovation: Internal organization of firms and its effect on innovations, The market for disembodied technologies and issues related to technology transfer: channels of technology transfer; Relationship between technology imports and local technology generating efforts- Changes in international governance rules with respect to promotion of innovation: R&D subsidies, public procurement, and Potential and actual effects of TRIPS compliance of domestic patent regimes. MNCs as a source of technology spillovers to local companies

Course Outcomes: At the end of the course, the students would be able to

CO1. Explain different types of innovations, national and regional innovation systems, and their role in economic development.

CO2. Develop analytical skills to assess innovation measurement techniques, diffusion processes, and the effectiveness of policy instruments.

CO3. Critically evaluate market dynamics, technology transfer mechanisms, and international governance rules affecting innovation and intellectual property rights.

Suggested Readings List

1. Greenhalgh, Christine and Mark Rogers (2010), Innovation, Intellectual Property, and Economic Growth, Princeton: Princeton University Press.
2. Swann, Peter G M. (2009), The Economics of Innovation, Cheltenham, UK and Northampton, MA, USA: Edward Elgar.
3. Fagerberg, Jan, David Mowery and Richard Nelson (eds.,2004), The Oxford Handbook of Innovation, New York: Oxford University Press. Hall,
4. Bronwyn and Nathan Rosenberg (eds., 2010), Handbook of the Eco- nomics of Innovation, Volumes I and II, Amsterdam: Elsevier.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

MIC 8 (Second Option)

Economics of Entrepreneurship

Course Code: 24MIC0804T(ii)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To understand entrepreneurship and venture creation across economies, entrepreneurial theories and organizational constraints, and evaluate determinants, financial constraints, and funding sources like debt, venture capital, and informal equity.

Unit-I

Introduction: Defining entrepreneurship, New venture creation and nascent entrepreneurs, Self-employment/business ownership, Push vs Pull factors behind entrepreneurship. International evidence about entrepreneurship: Developed countries vs Developing countries, Entrepreneurial landscape in India, Indian Society and entrepreneurship.

Unit-II

Theories of entrepreneurship: Early theories of entrepreneurship, Occupational choice model of entrepreneurship-Risk aversion, Static models, Dynamic models. Occupational choice model, Heterogeneous ability – the Lucas model, Variants and extensions of the Lucas model. Occupational choice model, Heterogeneous risk attitudes – the Kihlstrom and Laffont model, Organisational limitations of incumbent firms: Agency cost theories, Macroeconomic theories of entrepreneurship and growth: Wealth-based theories, Technology-based theories, Knowledge-based theories, Multiple equilibrium models.

Unit-III

Determinants of entrepreneurship: Pecuniary and non-pecuniary incentives, Desire for independence and job satisfaction, Human capital, Social capital, Risk attitudes, Other psychological traits, Macroeconomic factors, Technology as a determinant of entrepreneurship, Knowledge spill-overs and growth. Regional factors, Start-up and Innovation. Start up and Stand up: Schemes, performance, and impact.

Unit-IV

Debt finance for entrepreneurial ventures: Bernhardt's model of Type I rationing, Stiglitz and Weiss' model of Type II credit rationing, Bester's screening model. Venture capital and other sources of finance: Size of the entrepreneurial venture capital market, Advantages of venture capital finance for entrepreneurs, Value-adding activities by VCs, Drawbacks of venture capital, Factors inhibiting the use of equity finance, Informal equity finance: business angels, Other informal sources of finance.

Course Outcomes: At the end of the course, the students would be able to
CO1. Explain the entrepreneurial landscape, societal influences, and the impact of economic conditions on entrepreneurship.
CO2. Develop analytical skills to assess theoretical models of entrepreneurship, innovation, and start-up ecosystems.
CO3. Critically evaluate financing options for entrepreneurial ventures, including debt, venture capital, and alternative sources of funding.

Suggested Readings List

1. The Economics of Entrepreneurship, by Simon C. Parker, Cambridge University Press 2009
2. The Entrepreneur's Guide to Building a Successful Business, by Jonathan T. Scott, Published by: EFMD Brussels, Belgium 2017.
3. Entrepreneurship and Innovation Toolkit by Lee A. Swanson, Open Education Resource (OER) LibreTexts Project (https://LibreTexts.org)

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

Department of Economics

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

(Established by State Legislature Act 17 of 1995)

'A+' Grade, NAAC Accredited

Scheme of Examination for Integrated Five Years Programme

UG Four Years Programme (Single Major from First Semester

Name of the Programme: Integrated B.Sc. (Hons/Hons with Research)-M.Sc. Economics

According to National Education Policy-2020

For Batch 2023-24 Onwards

	FIFTH YEAR (SEMESTER-IX)						
Type of Course	**Course Code**	**Paper Nomenclature**	**Credits**	**Internal Marks**	**External Marks**	**Total Marks**	**Duration of Exam (Hrs.)**
Discipline Specific Courses (Core)	**24ECO0901T**	Advanced Public Economics	04	30	70	100	3
	24ECO0902T	Industrial Policies and Strategies	04	30	70	100	3
	24ECO0903T	Research Methodology	04	30	70	100	3
Discipline Specific Courses (Elective)	**24ECO0904T(i)** **Or** **24ECO0904T(ii)**	Economics of Regionalism **Or** Urban Economics	04	30	70	100	3
Discipline Specific Courses (Practicum)	**24ECO0905P(i)** **Or** **24ECO0905P(ii)**	Econometric Modelling **Or** Practices of Research Methodology	04	30	70	100	3
OEC Open Elective Course	**24OEC0904T**	**To be opted from university pool of OEC**	02	15	35	50	2
Total			22	165	385	550	

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UG Four Years Programme (Single Major from First Semester

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According to National Education Policy-2020

For Batch 2023-24 Onwards

FIFTH YEAR (SEMESTER-X) of Integrated Five-Year B.Sc. (Hons. /Hons. With Research)-M.Sc. Economics

Type of Course	Course Code	Paper Nomenclature	Credits	Internal Marks	External Marks	Total Marks	Duration of Exam (Hrs.)
Discipline Specific Courses (Core)	**24ECO1001T**	Contemporary issues of Indian Economy	04	30	70	100	3
	24ECO1002T	Haryana Economy	04	30	70	100	3
	24ECO1003T	Financial Economics	04	30	70	100	3
Discipline Specific Courses (Elective)	**24ECO1004T(i)** **Or** **24ECO1004T(ii)**	Social Cost Benefit Analysis **Or** Behavioral Economics	04	30	70	100	3
Discipline Specific Courses (Practicum)	**24ECO1005P(i)** **Or** **24ECO1005P (ii)**	AI Applications in Economics Or Agriculture Finance and Project Management	04	30	70	100	2
Open Elective Course	**24OEC1004T**	**To be opted from the University pool of OEC**	02	15	35	50	2
Total			22	165	385	550	

OR

FIFTH YEAR (SEMESTER-X) of Integrated Five-Year B.Sc. (Hons. /Hons. With Research)-M.Sc. Economics with Research Project							
Type of Course	**Course Code**	**Paper Nomenclature**	**Credits**	**Internal Marks**	**External Marks**	**Total Marks**	**Duration of Exam (Hrs.)**
Discipline Specific Courses (Core)	**24ECO1001T**	Contemporary issues of Indian Economy	04	30	70	100	3
	24ECO1002T	Haryana Economy	04	30	70	100	3
12 Credits Research Project/Dissertation							
Open Elective Course	**24OEC1004T**	**To be opted from the University pool of OEC**	02	15	35	50	2
Total			22		385	550	

Note: For Students who opt M.Sc. Economics with Research; they need to opt (02 DSC Core+12 Credits Research Project/Dissertation) + OEC of 2 credits

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Scheme of Examination for Integrated Five Years Programme
UG Four Years Programme (Single Major from First Semester
Name of the Programme: Integrated B.Sc. (Hons/Hons with Research)-M.Sc. Economics
According to National Education Policy-2020
For Batch 2023-24 Onwards

FIFTH YEAR (SEMESTER-IX)

Department Courses offered for the pools (OEC/EEC/ VAC/ Seminar)

Type of Course	Course Code	Paper Nomenclature	Credits	Internal Marks	External Marks	Total Marks	Duration of Exam (Hrs.)
Open Elective Course (OEC)	**24OEC0904T**	Introduction to Impact Evaluation Techniques	02	15	35	50	2

FIFTH YEAR (SEMESTER-X)

Department Courses offered for the pools (OEC/EEC/ VAC/ Seminar)

Type of Course	Course Code	Paper Nomenclature	Credits	Internal Marks	External Marks	Total Marks	Duration of Exam (Hrs.)
Open Elective Course (OEC)	**24OEC1004T**	Basics of Data Visualization and Dashboard Creation	02	15	35	50	2

Semester-IX

DSC-M1 (Core)

Advanced Public Economics

Course Code: 24ECO0901T

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To equip students with theoretical and practical insights into the role of government in resource allocation, welfare enhancement, public expenditure, and policy resilience.

Unit-I

Allocation of resources: Provision of public goods, voluntary exchanges models, impossibility of decentralised provision of public goods (contribution of Samuelson and Musgrave); demand revealing schemes for public goods – Tiebout model, theory of club goods.

Unit-II

Welfare economics and government policies: Pareto efficiency and social welfare, externalities and government solutions (taxes, subsidies, regulations), income redistribution and social security.

Unit–III

Public expenditure and social insurance: Theories of public expenditure (Wagner's law, Peacock – Wiseman Hypothesis), education, healthcare and social welfare programs, insurance market failure and government role (moral hazards, adverse selection), unemployment benefits, pensions, and redistribution

Unit–IV

Policy resilience: Current scenarios (public debt management and fiscal policy, fiscal constraints, economic growth strategies, economic inequalities, demographic trends and social policy), future of public policy

Course Outcomes: At the end of the course, the students would be able to
CO1. Understand and apply models of public goods, welfare economics, and income redistribution.
CO2. Analyze theories of public expenditure, social insurance, and evaluate government intervention in markets.
CO3. Critically assess contemporary public policy challenges, including fiscal management and social inequality.

Suggested Readings List

1. Bruce, Neil, "Public Finance", Addison- Wesley Educational Publishers, Inc.
2. Jones. Philip and Cullis, Jones, "Public Finance and Public Choice- Analytical Perspectives", Oxford University press
3. Stiglitz, Joseph, "Economics of the Public Sector", W.W.Norton and Company, new York/London
4. Rosen, H.S., "Public finance", Tata McGraw Hill • McNutt, P.A., "The economics of Public Choice", Edward Elgar Publishing Inc.
5. Mueller, D.C., "Public Choice- I, II, III" Cambridge university Press, Cambridge
6. Downs, A., "An Economic Theory of Democracy", Harper and Row, New York
7. Musgrave R.A and Peacock A.T., "Classics in the Theory of Public Finance", Mcmillan

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-M2 (Core)

Industrial Policies and Strategies

Course Code: 24ECO0902T

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To provide an in-depth understanding of India's industrial policies, globalization impacts, industrial strategies, and emerging reforms.

Unit-I

Evolution of Industrial Policies in India: Pre-Independence Industrial Development: British legacy and colonial impact, Post-Independence Industrialization: Nehruvian planned economy, Industrial Policy Resolutions (IPRs) of 1948, 1956, 1977, 1980, New Industrial Policy of 1991: Liberalization, Privatization, and Globalization (LPG), Role of public and private sector enterprises, Changes in regulatory frameworks: Licensing, FDI norms, and trade liberalization.

Unit-II

Globalization and India's Industrial Development: Impact of WTO, IMF, and World Bank on Indian industry, Role of Foreign Direct Investment (FDI) and Foreign Institutional Investment (FII), Special Economic Zones (SEZs) and export promotion policies, Comparative analysis with China, Brazil, and Southeast Asia, Trade agreements and their implications for industry, Make in India, Atmanirbhar Bharat, and industrial competitiveness.

Unit–III

Analysis of Industrial Strategies in India: Manufacturing Sector: Growth, challenges, and future outlook, Services Industry: IT, telecommunications, and financial services, MSMEs and Startups: Government policies and ease of doing business, Role of infrastructure, energy, and logistics in industrialization, Environmental regulations and sustainability concerns, Industry 4.0: Digital transformation, AI, and automation in India.

Unit–IV

Future of Industrial Strategies and Policy Reforms: Emerging trends in industrial policy in the post-COVID world, Green industrialization and sustainability-driven growth, Digital Economy and India's positioning in global supply chains, Industrial clusters, regional disparities, and policy responses, Challenges of labor reforms and workforce transformation, Policy recommendations for achieving sustainable industrial growth

Course Outcomes: At the end of the course, the students would be able to

CO1. Explain the historical evolution and shifts in India's industrial policies and regulatory frameworks.
CO2. Analyze the effects of globalization, FDI, and industrial competitiveness in India.
CO3. Evaluate industrial strategies, emerging technologies, and sustainable industrial reforms for future growth.

Suggested Readings List

1. Dani Rodrik (2015). *Premature Deindustrialization and India's Challenges.*
2. Kochhar, K. et al. (2006). *India's Pattern of Development: What Happened, What Follows?* IMF Working Paper.
3. Chakravarty, S. (1987). *Development Planning: The Indian Experience.* Oxford University Press.
4. Rodrik, D. (2011). *The Globalization Paradox: Democracy and the Future of the World Economy.* Norton & Co.
5. Balakrishnan, P. (2010). *Economic Growth in India: History and Prospects.* Oxford University Press.
6. WTO Reports on India's Trade and Industrial Policies.
7. Stiglitz, J.E. (2002). *Globalization and Its Discontents.* W.W. Norton & Co.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-M3 (Core)

Research Methodology

Course Code: 24ECO0903T

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objectives: To equip students with foundational and advanced research skills necessary for formulating research problems, designing research, collecting and analyzing data, and reporting research findings systematically.

Unit-I

Foundations of Research: Meaning and objectives of research; types of research; formulation of hypothesis, models, and theories; testing of theories and models; methodology versus methods; selection of research problems; literature review and its role in research.

Unit-II

Research Design and Sampling: Meaning and importance of research design; population, sample, and sampling techniques; random and non-random sampling methods; stratified, multistage, and systematic sampling designs**.**

Unit-III

Data Collection and Presentation: Primary and secondary data sources; introduction to Indian economic databases; nature of cross-section, time-series, and panel data; diagrammatic and tabular presentation (pie chart, bar diagram, histogram, scatter diagram, curve tracing, one-way and two-way tables), practical with Excel, STATA, Python

Unit-IV

Data Analysis and Report Writing: Measures of central tendency and dispersion; hypothesis testing (parametric and non-parametric); simple and multiple regression; correlation techniques; multivariate analysis (factor, cluster, conjoint analysis, multidimensional scaling, discriminant analysis); analysis of variance (ANOVA), practical with Excel, STATA, Python.

Course Outcomes: At the end of the course, the students would be able to
CO1. Formulate research problems, hypotheses, and design appropriate research frameworks.
CO2. Apply sampling techniques and data collection methods for practical research investigations.
CO3. Analyse quantitative data using appropriate statistical tools and present research findings effectively.

Suggested Readings List

1. C.R. Kothari, *Research Methodology*, Wiley Eastern Ltd., New Delhi.
2. Don. E. Ethridge, *Research Methodology in Applied Economics*.
3. W.G. Cochran, *Sampling Techniques*, John Wiley, New York.
4. W.J. Goode and P.K. Hatt, *Methods in Social Research*, McGraw Hill, New York.
5. T.S. Wilkinson and P.L. Bhandarkar, *Methodology and Techniques of Social Research*, Himalaya Publishing House, Bombay.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

DSC-M4 (Elective: First Option)

Economics of Regionalism

Course Code: 24ECO0904T(i)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To explore the rationale, mechanisms, and economic impacts of regional integration and cooperation in the global economy.

Unit-I

The rationale and motivation behind Regionalism; Multinational Trade Liberalization and RIAs; Regional v/s Global Liberalization; RIAs and Domestic Policy Integration.

Unit-II

The Economics of Custom Unions (Viner), Economies of Scale and Custom Union. The GATT's Article XXIV, Preferential Trading Areas and Multilateralism; Domino Theory of Regionalism; Hub and Spoke theory of regional integration.

Unit-III

East Asian Regionalism; Asia's New role in Global Economy; Relevance of Broader Regional Economic Integration in Asia; A Strategic Perspective on Asian Economic Integration.

Unit-IV

Building Blocs of Broader Regional Cooperation; ASEAN's Role in Asian Economic Integration; Japan in Asian Economic Community; China's Role in the Asian Economic Integration Process; India and the Asian Economic Integration.

Course Outcomes: At the end of the course, the students would be able to
CO1. Understand the motivations behind regional trade agreements and the distinction between regional and global liberalization.
CO2. Analyze the economic theories of customs unions, preferential trading areas, and multilateralism.
CO3. Evaluate regional integration processes in Asia with a focus on ASEAN, China, India, and East Asian cooperation.

Suggested Readings List

1. Jacob Viner (1950) "The Economics of Customs Unions" in the Custom Union Issue Chapter 4, NY: Carnegie Endowment for International Peace, 41-81.
2. W.M. Corden (1972)" Economies of Scale and Customs Union Theory" Journal of Political Economy, 80, January/February/November/December 465-75.
3. Murray C. Kemp & Henry Y. Wan Jr. 91976) An Elementary Proposition Encouraging the Formation of Customs Unions, Journal of International Economics, 6 Feb. 95-7.
4. Paul Wonnacott and Ronald Wonnacott (1981) "Is Unilateral Tariff Reduction Preferable to a Customs Union? The Curios Case of the Missing Foreign Tariffs' American Economic Review 719(4) Sep. 704-14
5. Richard H. Snape 91993) "History and Economics of GATTS Article XXTV in My Anderson and Richard Blackhurs (Eds) Regional Integration and Global Trading System, New York: Havesfer Wheatsheaf, 273-91.
6. J. Bhagwati & A. Panagariya (1998) "Preferential Trading Areas and Multilateralism: Strangers, Friends and Foes? In Regionalism in Trade Policy: Essays on Preferential Trading, Singapore, River Edge, NJ & London.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-M4 (Elective: Second Option)

Urban Economics

Course Code: 24ECO0904T(ii)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To analyse the economic forces shaping urban areas, focusing on land use, housing markets, transportation systems, and sustainable urban development.

Unit-I

The role and significance of cities in economic development, Historical evolution of urban areas, Theories explaining the existence and growth of cities, Economic definitions and characteristics of urban areas.

Unit-II

Determinants of urban spatial structure, Models of urban land use: monocentric and polycentric cities, Factors influencing residential and commercial location choices, Urban sprawl: causes, consequences, and policy responses.

Unit-III

Housing market dynamics: supply and demand factors, Determinants of housing prices and rents, Government interventions in housing markets: rent control, housing subsidies, and zoning regulations, Issues of housing affordability and homelessness.

Unit-IV

Economic analysis of urban transportation systems, Transportation demand and supply: congestion and pricing strategies, Impact of transportation infrastructure on urban development, Sustainable urban transportation policies.

Course Outcomes: At the end of the course, the students would be able to
CO1. Understand the historical evolution and economic significance of cities and urban areas.
CO2. Analyze urban land use patterns, housing market dynamics, and policy interventions.
CO3. Evaluate urban transportation systems and propose strategies for sustainable urban development.

Suggested Readings List

1. Arthur O'Sullivan, *Urban Economics*, McGraw-Hill Education.
2. Edwin S. Mills and Bruce W. Hamilton, *Urban Economics*, Addison-Wesley.
3. John F. McDonald and Daniel P. McMillen, *Urban Economics and Real Estate: Theory and Policy*, Wiley-Blackwell.
4. Jan K. Brueckner, *Lectures on Urban Economics*, MIT Press.
5. Edward Glaeser, *Triumph of the City*, Penguin Books.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

DSC-M5 (Practicum: First Option)

Econometric Modelling

Course Code: 24ECO0905P(i)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Practical)**
External Assessment: 70

Course Objectives: To enable students to apply econometric tools using real-world data for empirical economic analysis.

Unit-I

Fundamentals of Econometric Modelling: Model formulation: Functional forms, specification, and estimation Classical Linear Regression Model (CLRM): Estimation and interpretation Assumptions of CLRM and diagnostics Introduction to econometric software (e.g., STATA, R, EViews)

Practicum Component: Estimating simple and multiple regression models Performing t-tests, F-tests, and R^2 analysis

Unit-II

Violations of Classical Assumptions: Multicollinearity: Detection and remedies**,** Heteroskedasticity: White test, Breusch-Pagan test, robust standard errors**,** Autocorrelation: Durbin-Watson test, Breusch-Godfrey test

Practicum Component: Model re-specification and correction for heteroskedasticity and autocorrelation, Use of robust estimators

Unit-III

Dummy Variables and Model Specification: Dummy variables in regression**,** Interaction terms and structural change (Chow test)**,** Model selection criteria (AIC, BIC), RESET test

Practicum Component: Application of dummy variables, Piecewise regressions, Testing and correcting model misspecification

Unit-IV

Applications with Time Series and Panel Data: Stationarity and unit root tests (ADF, PP tests)**,** ARIMA modelling and forecasting**,** Fixed effects and random effects models**,** Hausman test

Practicum Component: Time series data modelling (trend, seasonality), Panel data estimation using STATA or R, Model forecasting and interpretation

Course Outcomes: At the end of the course, the students would be able to
CO1. Apply econometric methods to estimate, interpret, and validate economic relationships using statistical software.
CO2. Develop, test, and refine economic models using cross-sectional, time series, and panel data.
CO3. Build skills in empirical research design, data handling, and communication of econometric findings
.

Suggested Readings List

1. **Gujarati, D.N., & Porter, D.C.** (2022). *Basic Econometrics* (6th ed.). McGraw-Hill.
2. **Wooldridge, J.M.** (2020). *Introductory Econometrics: A Modern Approach* (7th ed.). Cengage Learning.
3. **Verbeek, M.** (2017). *A Guide to Modern Econometrics* (5th ed.). Wiley.
4. **Enders, W.** (2014). *Applied Econometric Time Series* (4th ed.). Wiley.
5. **Baltagi, B.H.** (2021). *Econometrics* (6th ed.). Springer.
6. **Stock, J.H., & Watson, M.W.** (2020). *Introduction to Econometrics* (4th ed.). Pearson.

NOTE: Practical Examination will be Taken by External Examiner

DSC-M5 (Practicum: Second Option)

Practices of Research Methodology

Course Code: 24ECO0905P(ii)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Practical)**
External Assessment: 70

Course Objective: To equip students with practical skills in formulating research problems, designing methodologies, collecting data, and applying analytical tools for empirical economic research.

Unit I

Research Design and Problem Formulation: Identification of research problem and review of literature**,** Formulation of objectives and hypotheses**,** Types of research design: Exploratory, descriptive, analytical, experimental**,** Preparation of research proposal

Practicum Component: Framing research questions and objectives, Drafting a mini research proposal, Annotated bibliography creation

Unit II

Data Collection and Sampling Techniques: Primary and secondary data: Sources, tools, and methods**,** Methods of survey and field research**,** Sampling techniques: Random, stratified, cluster, purposive, snowball**,** Designing questionnaires and interview schedules

Practicum Component: Designing a structured questionnaire, conducting a pilot survey/interview, Data entry using Excel or Google Forms

Unit III

Data Analysis and Interpretation: Data coding, tabulation, and classification**,** Descriptive statistics: Mean, median, mode, SD, skewness**,** Inferential statistics: Correlation, regression, hypothesis testing (t, z, chi-square tests)**,** Introduction to statistical tools: Excel, SPSS, R

Practicum Component: Cleaning and organizing data, performing statistical test, Using software tools for analysis

Unit IV

Report Writing and Ethics in Research: Components of a research report/thesis**,** Referencing styles: APA, MLA, Chicago**,** Plagiarism and ethical issues in research**,** Presentation of research findings: Tables, charts, visual aids

Practicum Component: Writing chapters of a short research report, Creating visual data presentations, Citation and referencing using software (Zotero/Mendeley)

Course Outcomes: : At the end of the course, the students would be able to

CO1. Students will gain hands-on experience in formulating research problems and hypotheses.

CO2. They will learn to collect, manage, and analyze both qualitative and quantitative data.

CO3. They will develop capabilities in writing research reports and using research software tools effectively.

Suggested Readings List:

1. Kothari, C.R. & Garg, G. (2022). *Research Methodology: Methods and Techniques* (5th ed.). New Age International.
2. Kumar, R. (2023). *Research Methodology: A Step-by-Step Guide for Beginners* (6th ed.). SAGE Publications.
3. Babbie, E. (2021). *The Practice of Social Research* (15th ed.). Cengage Learning.
4. Neuman, W.L. (2020). *Social Research Methods: Qualitative and Quantitative Approaches* (8th ed.). Pearson.
5. Bryman, A. (2019). *Social Research Methods* (6th ed.). Oxford University Press.
6. Punch, K. & Oancea, A. (2020). *Introduction to Research Methods in Education* (3rd ed.). SAGE.

NOTE: Practical Examination will be Taken by External Examiner

OEC (Open Elective Course)

Introduction to Impact Evaluation Techniques

Course Code: 24SEC0904T

Maximum Marks: 50 **(Total Credits: 02)**
Internal Assessment: 15 **(Theory)**
External Assessment: 35 **Time Allowed: 2 Hours**

Course Objectives: To introduce students to basic concepts and methods used in evaluating the causal impact of public policies and development programs**.**

Unit-I

Fundamentals of Impact Evaluation: Concept and need for impact evaluation, Theory of change and logical frameworks, Causality and counterfactuals, Randomized Controlled Trials (RCTs): Design, implementation, advantages, and limitations, Examples of RCTs in economics (education, health, social protection)

Unit II

Quasi-Experimental Methods in Impact Evaluation: Difference-in-Differences (DiD)**,** Propensity Score Matching (PSM)**,** Regression Discontinuity Design (RDD)**,** Instrumental Variables (IV) – brief introduction**,** Strengths and limitations of each method**,** Case studies from Indian policy evaluations (e.g., MNREGA, mid-day meals, PMUY)

Course Outcomes: At the end of the course, the students would be able to
CO1. Understand the fundamental concepts and goals of impact evaluation in economic policy.
CO2. Gain introductory knowledge of experimental and quasi-experimental methods of causal inference.
CO3. Develope basic skills in interpreting results from impact evaluation studies using real-world examples.

Suggested Readings List:

1. Gertler, P. et al. (2016). *Impact Evaluation in Practice* (2nd ed.). World Bank. *(Also available free online from the World Bank Open Knowledge Repository)*
2. Glennerster, R. & Takavarasha, K. (2013). *Running Randomized Evaluations: A Practical Guide*. Princeton University Press.
3. Duflo, E., Glennerster, R., & Kremer, M. (2007). *Using Randomization in Development Economics Research: A Toolkit*, in *T. Schultz & J. Strauss (Eds.), Handbook of Development Economics, Vol. 4*.
4. Angrist, J. & Pischke, J-S. (2015). *Mastering 'Metrics: The Path from Cause to Effect*. Princeton University Press.
5. Khandker, S.R., Koolwal, G.B., & Samad, H.A. (2010). *Handbook on Impact Evaluation: Quantitative Methods and Practices*. World Bank.

Examiner's Note: The course contents of the courses having 02 credits will be distributed among 2 units and maximum marks will be assigned 50 (35 external: 15 internal). The maximum time duration for attempting the paper will be of 2 hours. The examiner is required to set five questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 3 marks each. In addition to that four more questions will be set, two questions from each unit. The students shall be required to attempt three questions in all selecting one question from each unit consisting of 10 marks each in addition to compulsory question No. 1.

SEMESTER-X

DSC-M6 (Core)

Contemporary Issues of Indian Economy

Course Code: 24ECO1001T

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Practical)**
External Assessment: 70

Course Objective: To develop an in-depth understanding of structural, fiscal, and external sector issues in the Indian economy and their policy implications.

Unit-I

Changing structure of Indian economy, Imbalance in occupational pattern and contribution to GDP, Determinants of growth rate of GDP in India, Behaviour of saving and investment in recent years, Infrastructure bottlenecks in Indian economy, Impact of institutional factors on development of Indian economy.

Unit-II

Issues of productivity in agriculture sector and trends in its diversification; Issues of competitiveness of Indian manufacturing sector and emergence of knowledge intensive industries in India.

Unit-III

Centre-State finance relations; Recent Finance Commissions, NITI Ayog; other sources of transfer; Tax revenue of the central and state governments; evaluation of Indian tax structure; Goods and services tax in India.

Unit-IV

Recent foreign trade policy in India; Composition and Direction of India's foreign trade, Indian government's policy towards foreign capital; foreign investment inflows, foreign aid and India's external debt.

Course Outcomes: At the end of the course, the students would be able to:
CO1. Evaluate structural changes, sectoral contributions, and institutional influences on India's economic development.
CO2. Analyze key issues in agriculture, manufacturing, and knowledge-driven sectors.
CO3. Examine fiscal dynamics, Centre-State relations, and the impact of foreign trade and capital flows on the Indian economy.

Suggested Readings List:

1. Dhirendra Nath Konar, Contemporary Issues of Indian Economy, Akansha Publishing House, Delhi
2. Uma Kapila, India's Economic Development since 1947, Academic Foundation
3. Reserve Bank of India, Handbook of Statistics on Indian Economy
4. Government of India, Ministry of Finance, Economic Survey
5. Government of India, Planning Commission, Union Budgets
6. Government of India, Ministry of Commerce, Department of Commerce, India's Foreign Trade Policy
7. Government of India, Department of Industrial Policy and Promotion, SIA Newsletters, FDI Factsheets
8. Timothy Besley, Contemporary Issues in Development Economics, Palgrave Macmillan
9. Kaushik Basu, The Oxford Companion to Economics in India, Oxford University Press, New Delhi
10. Mahendra Dev, S., Inclusive Growth in India, Oxford University Press, New Delhi

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-M7 (Core)

Haryana Economy

Course Code: Course Code: 24ECO1002T

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To provide an in-depth understanding of the structural changes, sectoral developments, and fiscal issues of Haryana's economy since its formation.

Unit-I

Evolution of Haryana economy since 1966. Major milestones, achievements and deficiencies, Structural Changes in Haryana Economy- Agricultural in Haryana, Growth & productivity Green Revolution; role, performance & implications; Agricultural diversification, rationale, constraints and prospectus; agriculture credit & marketing, Soil degradation, Irrigation and water management.

Unit–II

Industry in Haryana: Industrial development – Pattern, performance, constraints & challenges; Small–scale industry role, problems & future prospects; State & industrial development, HSIIDC, Development of transport and banking in Haryana, Regional inequality.

Unit–III

Service sector in Haryana: emergence of knowledge intensive services in Haryana, Social sector development: health, education and women empowerment indicators and issues.

Unit–IV

Public Finances of Haryana, Sources of revenue and heads of expenditure; Problems of resource mobilization in Haryana, State Public sector Enterprises, off budget liabilities.

Course Outcomes: At the end of the course, the students would be able to

CO1. Describe the evolution and structural transformation of Haryana's agricultural, industrial, and service sectors.

CO2. Analyze sector-specific challenges, regional inequalities, and social development indicators in Haryana.

CO3. Evaluate Haryana's public finance structure, revenue mobilization issues, and the role of state enterprises.

Suggested Readings List

1. Hoover, F.M. (1984) An Introduction to Regional Economics, UCEB.
2. Richardson, H.W. (1972) Regional Economics, Weidenfeld and Nicolson, London.
3. Statistical Abstract and Economics Survey of Haryana various years.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-M8 (Core)

Financial Economics

Course Code: 24ECO1003T

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: : To introduce students to the fundamental concepts of interest theory, portfolio analysis, asset pricing models, and derivatives in financial markets.

Unit-I

Basic theory of interest; discounting and present value; internal rate of return; evaluation criteria; fixed-income securities; bond prices and yields; interest rate sensitivity and duration; immunization; the term structure of interest rates; yield curves; spot rates and forward rates.

Unit-II

Portfolio Analysis (Single-period random cash flows): Random asset returns; portfolios of assets; portfolio mean and variance; feasible combinations of mean and variance; mean-variance portfolio analysis: the Markowitz model and the two-fund theorem; risk-free assets and the one-fund theorem.

Unit–III

CAPM: The capital market line; the capital asset pricing model; the beta of an asset and of a portfolio; security market line; use of the CAPM model in investment analysis and as a pricing formula.

Unit–IV

Options and Derivatives: Introduction to derivatives and options; forward and futures contracts; options; forward and future prices; stock index futures; interest rate futures; the use of futures for Hedging.

Course Outcomes: At the end of the course, the students would be able to
CO1. Apply concepts of interest rates, bond pricing, and term structures in financial evaluations.
CO2. Analyze risk-return trade-offs using portfolio theory and the Capital Asset Pricing Model (CAPM).
CO3. Understand and utilize derivative instruments like options, forwards, and futures for investment and hedging strategies.

Suggested Readings List

1. David G. Luenberger (1997), Investment Science, Oxford University Press, USA.
2. Hull, John C. (2005), Options, Futures and Other Derivatives, Pearson Education, 6th edition.
3. Thomas E. Copeland, J. Fred Weston and Kuldeep Shastri, (2003), Financial Theory and Corporate Policy, Prentice Hall, 4th edition.
4. Richard A. Brealey and Stewart C. Myers, (2002), Principles of Corporate Finance, McGraw- Hill, 7th edition.
5. Stephen A. Ross, Randolph W. Westerfield and Bradford D. Jordan (2005), Fundamentals of Corporate Finance. McGraw-Hill, 7th edition.
6. Burton G. Malkiel (2003), A Random Walk Down Wall Street, W.W. Norton & Company. William Sharpe (2003), Gordon Alexander and Jeffery Bailey, Investments, Prentice Hall of India, 6th edition.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-M9 (Elective: First Option)

Social Cost-Benefit Analysis

Course Code: 24ECO1004T (i)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To understand social benefits, costs, and accounting prices in cost-benefit analysis, externalities, discount rates, and opportunity costs, and evaluate project selection criteria, risk assessment, and public evaluation in private projects.

Unit-I

Concepts of Social Benefits and Costs – Direct and Indirect: Tangible and Intangible- Problems in the evaluation of Benefits and Costs. Accounting prices- Meaning of Accounting prices, accounting prices and Pareto Optimality, Marginal Cost and Willingness to pay, Limitations of Market Prices. The "Second Best" problem, accounting prices in the Absence of markets. Nature of Cost Benefit Analysis, Need for Cost Benefit Analysis; with, particular reference to the developing economies.

Unit-II

Externalities, Pecuniary and Technological externalities, the source or external effects externalities, alternative technologies and cost benefit analysis, Collective goods. The Social Rate of Discount, Social Time Preference Rate, The opportunity Cost, rate of Discount, Equilibrium, Social Time preference Rate and Social Opportunity Cost.

Unit-III

Decision formulae for project choice: Net present value and input constraints, Optimal time phasing, Internal Rate of Return, Present value versus Internal rate of return, other criteria. Risk and Uncertainty -Relevance of risk and Uncertainty, Uncertainty and Decision Criteria-Some rules of Thumb.

Unit-IV

Plans, Projects, choice and Project design, the selection of projects and the investment programme, Project design and decentralized evaluation. Private sector projects-The need for public evaluation of private projects, the method of evaluation of private projects: Some applications.

Course Outcomes: At the end of the course, the students would be able to
CO1. Explain cost-benefit analysis principles, including direct and indirect benefits, accounting prices, and market limitations.
CO2. Develop analytical skills to assess externalities, social discounting, and decision-making in project evaluation.
CO3. Critically evaluate project selection methodologies, risk management techniques, and public-private investment assessment frameworks.

Suggested Readings List

1. Ajit K. Dasgupta and D.W. Pearce, "Cost-Benefit Analysis: Theory and Practice," 1st Edition, Macmillan, 1972.
2. I.M.D. Little and J.A. Mirrlees, "Project Appraisal and Planning for Developing Countries," 1st Edition, Basic Books, 1974.
3. I.M.D. Little and J.A. Mirrlees, "Manual of Industrial Project Analysis: Social Cost Benefit Analysis," 1st Edition, Organisation for Economic Co-operation and Development (OECD), 1969.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

DSC-M9 (Elective: Second Option)

Behavioural Economics

Course Code: 24ECO1004T (ii)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To understand the foundations and evolution of behavioural economics, decision-making processes, heuristics, and biases, and evaluate models like prospect theory, loss aversion, and modifications to expected utility theory.

Unit-I

Behavioural Economics and the Standard Model, History and Evolution of Behavioural Economics, Relationship with Other Disciplines, Objectives, Scope, and Structure, Theories in Behavioural Economics, Evidence in Behavioural Research, Consilience in Behavioural Economics

Unit-II

Standard Model of Preferences, Axioms, Assumptions, and Definitions, The Evolutionary Biology of Utility, Broadening Rationality, Types of Utility, The Neuroscientific Basis of Utility, Policy Implications

Unit-III

Understanding heuristics: Representativeness, availability, and anchoring; Biases: Overconfidence, optimism bias, and hindsight bias; The Standard Model of Beliefs, Probability Estimation, Self-Evaluation Bias, Projection Bias, Magical Beliefs, Causes of Irrationality

Unit-IV

Background of Decision-Making Theories, Conventional Approaches to Modifying Expected Utility Theory (EUT), Prospect Theory, Reference Points and Loss-Aversion, Shape of the Utility Function, Decision-Weighting, Criticisms of Prospect Theory, Recent Theories and Conclusions

Course Outcomes: At the end of the course, the students would be able to
CO1. Explain the key principles, theories, and empirical evidence in behavioral economics.
CO2. Develop analytical skills to assess heuristics, biases, and irrational decision-making in economic contexts.
CO3. Critically evaluate behavioral decision-making theories and their implications for policy-making and economic modeling.

Suggested Readings List

1. Wilkinson, N., & Klaes, M. (2012). *An introduction to behavioral economics* (2nd ed.). Palgrave Macmillan.
2. Camerer, C. F. (2003). *Behavioral game theory: Experiments in strategic interaction*. Princeton University Press.
3. Fehr, E., & Schmidt, K. M. (2006). The economics of fairness, reciprocity, and altruism: Experimental evidence and new theories. In S.-C. Kolm & J. M. Ythier (Eds.), *Handbook of the economics of giving, altruism and reciprocity: Foundations* (Vol. 1, pp. 615–691).
4. Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press.
5. Sunstein, C. R. (2016). *The ethics of influence: Government in the age of behavioral science*. Cambridge University Press.
6. Laibson, D., & List, J. A. (2020). *Behavioral economics*. Edward Elgar Publishing.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be 3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

DSC-M10 (Practicum: First Option)

AI Applications in Economics

Course Code: 24ECO1005P (i)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To equip students with practical skills to apply AI tools and models for solving real-world economic problems.

Unit I

Apply machine learning algorithms (e.g., regression, classification) using Python to analyze economic data.

Unit II

Use Natural Language Processing (NLP) to extract insights from economic texts such as policy documents and financial news.

Unit III

Build and evaluate predictive models for macroeconomic indicators (GDP, inflation, unemployment).

Unit IV

Design AI-driven simulations and agent-based models to study market behavior and policy impact.

Course Outcomes: At the end of the course, the students would be able to:

1. Apply AI tools to clean, visualize, and interpret economic datasets.
2. Develop and evaluate predictive models for key economic variables.
3. Design practical AI-based solutions for policy and market analysis.

Suggested Readings List

1. Chakraborty, C., & Joseph, A. (2017). *Machine Learning in Economics and Econometrics*.
2. Varian, H. R. (2014). *Big Data: New Tricks for Econometrics*. Journal of Economic Perspectives.
3. Geron, A. (2019). *Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow*.
4. Russell, S., & Norvig, P. (2021). *Artificial Intelligence: A Modern Approach*.
5. Mitchell, T. (1997). *Machine Learning*. (For fundamentals).

NOTE: Practical Examination will be Taken by External Examiner

DSC-M10 (Practicum: Second Option)

Agriculture Finance and Project Management

Course Code: 24ECO1005P (ii)

Maximum Marks: 100 **(Total Credits: 04)**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: : To provide students with the knowledge of financial principles, credit systems, and project management techniques relevant to agriculture and rural development.

Unit-I

Role and Importance of Agricultural Finance. Financial Institutions and credit flow to rural / priority sector. Agricultural lending - Direct and Indirect Financing - Financing through Co-operatives, NABARD and Commercial Banks and RRBs. District Credit Plan and lending to agriculture/priority sector. Micro-Financing and Role of MFI's - NGO's, and SHG's. Lending to farmers - The concept of 3 C's, 7 P's and 3 R's of credit. Estimation of Technical feasibility, Economic viability and repaying capacity of borrowers and appraisal of credit proposals. Understanding lenders and developing better working relationship and supervisory credit system. Credit inclusions - credit widening and credit deepening.

Unit–II

Financial Decisions - Investment, Financing, Liquidity and Solvency. Preparation of financial statements - Balance Sheet, Cash Flow Statement and Profit and Loss Account. Ratio Analysis and Assessing the performance of farm / firm.

Unit–III

Project Approach in financing agriculture. Financial, economic and environmental appraisal of investment projects. Identification, preparation, appraisal, financing and implementation of projects. Project Appraisal techniques - Undiscounted measures. Time value of money - Use of discounted measures - B-C ratio, NPV and IRR.

Unit–IV

Risks in financing agriculture. Risk management strategies and coping mechanism. Crop Insurance programmes - review of different crop insurance schemes - yield loss and weather-based insurance and their applications.

Course Outcomes: At the end of the course, the students would be able to
CO1. Understand the role of agricultural finance in enhancing farm productivity and rural development.
CO2. Analyze various sources, types, and terms of agricultural credit and financial institutions' functioning.
CO3 Apply project management techniques to design, evaluate, and implement agricultural projects effectively.

Suggested Readings List

1. Dhubashi PR. 1986. Policy and Performance - Agricultural and Rural Development in Post Independent India. Sage Publ.
2. Gittinger JP 1982. Economic Analysis of Agricultural Projects. The Johns Hopkins Univ. Press.
3. Gupta SC. 1987. Development Banking for Rural Development. Deep & Deep Publ.
4. Little IMD &Mirlees JA. 1974. Project Appraisal and Planning for Developing Countries. Oxford & IBH Publ.
5. Muniraj R. 1987. Farm Finance for Development. Oxford & IBH Publ.

NOTE: Practical Examination will be Taken by External Examiner

Open Elective Course (OEC)

Basics of Data Visualization and Dashboard Creation

Course Code: 24OEC1004T

Maximum Marks: 50 **(Total Credits: 02)**
Internal Assessment: 15 **(Theory)**
External Assessment: 35 **Time Allowed: 2 Hours**

Course Objective: To enable students to effectively present economic data using visualization techniques and interactive dashboards for research and decision-making**.**

Unit I

Introduction to Data Visualization: Importance and principles of data visualization**,** Types of visualizations: line charts, bar charts, histograms, scatter plots, heatmaps, etc. Choosing appropriate chart types for economic data**,** Tools: Introduction to MS Excel, Tableau, and Power BI**,** Best practices in design: avoiding distortion, effective use of color, labels, legends**,** Hands-on: Creating charts in Excel and Tableau

Unit II

Dashboard Creation and Storytelling with Data: Concepts of dashboards and their applications in economics and public policy**,** Layout design: interactivity, filters, drill-downs**,** KPI visualization and summary metrics**,** Case studies: dashboards from World Bank, RBI, IMF, UNDP, etc. Hands-on: Building dashboards in Excel and Tableau/Power BI**,** Publishing and sharing dashboards for research and policymaking

Course Outcomes: At the end of the course, the students would be able to
CO1. Gain proficiency in fundamental principles of data visualization using real-world economic data.
CO2. Learn to create compelling static and interactive visualizations and dashboards using Excel, Tableau, or Power BI.
CO3. Understand how to communicate data insights clearly to both technical and non-technical audiences.

Suggested Readings List:

1. **Knaflic, C. N.** (2015). *Storytelling with Data: A Data Visualization Guide for Business Professionals*. Wiley.
2. **Murray, D.** (2021). *Tableau for Dummies* (3rd ed.). Wiley.
3. **MacDonald, M.** (2022). *Excel Dashboards and Reports* (4th ed.). Wiley.
4. **Dykes, B.** (2019). *Effective Data Storytelling: How to Drive Change with Data, Narrative and Visuals*. Wiley.
5. **Evergreen, S. D. H.** (2017). *Effective Data Visualization: The Right Chart for the Right Data* (2nd ed.). SAGE.
6. World Bank Data Blog & Tableau Public (Online Practice Resources)

Examiner's Note: The course contents of the courses having 02 credits will be distributed among 2 units and maximum marks will be assigned 50 (35 external: 15 internal). The maximum time duration for attempting the paper will be of 2 hours. The examiner is required to set five questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 3 marks each. In addition to that four more questions will be set, two questions from each unit. The students shall be required to attempt three questions in all selecting one question from each unit consisting of 10 marks each in addition to compulsory question No. 1.

Note: For Students who opt M.Sc. Economics with Research Project; they need to opt (02 DSC Core+12 Credits Research Project/Dissertation) + OEC of 2 credits