Integral University, Lucknow

Effective from Session: 2026-27							
Course Code	A0801001T/HE522	**Title of the Course**	**Theories of Economic Growth**	**L**	**T**	**P**	**C**
Year	II	**Semester**	IV	**4**	**0**	**0**	**4**
Pre-Requisite	Graduation	**Co-requisite**	None				
Course Objectives	The course aims to introduce students to the concept and measurement of economic growth and the major theories explaining the growth process. It also seeks to provide an understanding of classical, neo-classical, and endogenous growth models and highlight the role of technological progress in economic development.						

Course Outcomes

CO1	Given the basic concepts and measurement of economic growth, students will be able to explain the meaning, characteristics, and factors affecting economic growth and evaluate theories such as balanced and unbalanced growth and stages of economic development.
CO2	Given the modern theories of economic growth, students will assess the structure and implications of growth models such as the Harrod–Domar model and the neo-classical growth models of Solow, Meade, and Swan–Uzawa.
CO3	Provided the Cambridge theories of growth, students will analyze the contributions of Joan Robinson, Kaldor, and Pasinetti and examine issues such as the capital controversy and the relationship between money and economic growth.
CO4	With the concepts of technological progress, students will evaluate the role of embodied and disembodied technological change, neutral and non-neutral technological progress, learning-by-doing, and growth accounting in economic development.
CO5	Given the optimal and endogenous growth models, students will assess the theories of Ramsey, Von Neumann, the Golden Rule of Accumulation, and endogenous growth models such as the AK model, Lucas model, and Romer model.

Unit No.	Content of Unit	Contact Hrs.	Mapped CO
1.	**Economic Growth: Concept & Theories:** Economic growth- Meaning, Characteristics, Measurement and Factors affecting Economic Growth, Balanced and Unbalanced Economic Growth, Marx's Stages of Growth, Rostow's Stages of Economic Growth; O-Ring theory of economic development.	08	CO1
2.	**Modern Theories of Economic Growth:** Harrod-Domar Model of Economic Growth; Contemporary Growth Theories of Neo-Classical: Solow, Meade, and Uzawa Two-Sector Growth Model.	08	CO2
3.	**Cambridge Theories of growth:** Ms. Joan Robinson and Concept of Golden Age, Kalecki's Theory of Distribution, Kaldor's Model of Economic Growth, Pasinetti's Theory of Growth and Distribution, The Capital Controversy, Tobin's Monetary Growth Theory.	08	CO3
4.	**Technological Progress and Economic Growth:** Technological Progress: Embodied and Disembodied; Neutral and Non-Neutral (Hicks and Harrod); Arrow's learning-by-doing approach to economic growth, total factor productivity, and growth accounting.	08	CO4
5.	**Optimal and Endogenous Growth Theory:** Optimal growth theory: Ramsay, Von Neumann, Golden Rule of Accumulation. Endogenous growth models: AK model, Lucas Model of Human Capital and, Romer Model of Endogenous Innovation.	08	CO5

Reference Books:

1. Adelman, I, Theories of Economic Growth and Development, Stanford University, 1961.
2. Barrow, R. and X. Sela-I, Martin, Economic Growth, PHI Learning Pvt. Ltd. 2012.
3. Chakravarty, S, Alternative Approaches to the Theory of Economic Growth, Oxford University Press.
4. Gillis, M., D.H. Perkins, M. Romer and D.R. Snodgrass (1992), Economics of Development, (3rd Edition), W.W. Norton, New York.
5. Ghatak, S. (1986), an Introduction to Development Economics, Allen and Unwin, London.
6. Jones, C.I, Introduction to Economic Growth, W W Norton & Co. 2002
7. Kindleberger, C.P. (1977), Economic Development, (3rd Edition), McGraw Hill, New York.
8. Meier, G.M. and J.E. Rauch (2005), Leading Issues in Economic Development, (8th Edition), Oxford University Press, New Delhi.
9. Ray Debraj, Development Economics, Oxford University Press, New Delhi, 2019
10. Sen, A.K. (Ed.) (1990), Growth Economics, Penguin, Harmonds worth.
11. Solow, R.M, Growth Theory: An Exposition, Oxford University Press, Oxford, 2000.
12. Todaro, M.P. and S.C. Smith (2003), (8th Edition), Economic Development, Pearson Education, Delhi.
13. Thirlwal, A.P. (1999), (6th Edition), Growth and Development, Macmillan, U.K.

E-Learning Source:

https://swayam.gov.in/ ; http://www.ignouhelp.in/ignou-study-material/

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	1	2	2	1	1	2	3	2	2
CO2	3	3	1	2	1	1	1	2	3	2	2
CO3	3	3	1	2	1	1	1	2	3	2	2
CO4	3	3	1	2	2	1	2	2	3	2	2
CO5	3	3	1	2	2	1	2	2	3	2	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2026-27							
Course Code	A0801002T/HE523	**Title of the Course**	Financial Institutions and Markets	**L**	**T**	**P**	**C**
Year	II	**Semester**	IV	**4**	**0**	**0**	**4**
Pre-Requisite	Graduation	**Co-requisite**	None				
Course Objectives	To develop advanced analytical and evaluative skills to understand the structure, functioning, and reforms of financial institutions and markets in both domestic and global contexts.						

Course Outcomes

CO1	Given concepts of financial systems, students will be able to explain the structure, functions, and role of financial institutions and intermediaries in economic development.
CO2	Using banking concepts, students will analyze the functioning of commercial banks, monetary policy, and banking sector reforms.
CO3	Given international financial concepts, students will evaluate the role of global financial institutions in promoting international financial stability.
CO4	Using financial market concepts, students will analyze the functioning of money and capital markets, financial instruments, and market operations.
CO5	Given foreign exchange market concepts, students will assess exchange rate systems, currency convertibility, and risk management in international financial markets.

Unit No.	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1	Financial and non-financial assets; Financial intermediation; Structure and functions of financial system; Indicators of financial development; Financial development and economic growth; Globalization of financial systems.	08	CO1
2	Central Bank: Functions and monetary policy framework; Monetary policy reforms (inflation targeting); Commercial banks: credit creation, profitability vs liquidity; NPAs and resolution mechanisms (IBC, Basel norms); Banking sector reforms; Cooperative banks.	08	CO2
3	International liquidity; Global financial flows; IMF, World Bank (IBRD, IDA); IFC, ADB, BIS; New Development Bank (BRICS Bank); Role in global financial stability.	08	CO3
4	Money Market: Treasury bills, commercial paper, certificates of deposit, call money market, mutual funds. Capital Market: Primary and secondary markets; Government securities; Bond market; Derivatives (futures, options); Commodity market; Infrastructure financing.	08	CO4
5	Foreign exchange market: structure and participants; Exchange rate determination; REER & NEER; Fixed vs flexible exchange rates; Managed float system; Currency convertibility (Indian context); Risk hedging and currency derivatives.	08	CO5

Reference Books:

1. Bhole, L.M. & Mahakud, J. – Financial Institutions and Markets
2. Khan, M.Y. – Indian Financial System
3. Pathak, B.V. – The Indian Financial System
4. Fabozzi, F.J. – Foundations of Financial Markets and Institutions
5. Mishkin, F.S. – The Economics of Money, Banking and Financial Markets
6. Reserve Bank of India – Report on Trend and Progress of Banking in India
7. RBI – Monetary Policy Reports
8. Frederic Mishkin – Money, Banking and Financial Markets
9. Sayers, R.S. – Modern Banking
10. Indian Institute of Banking & Finance – Principles and Practices of Banking
11. Hull, J.C. – Options, Futures and Other Derivatives
12. Fabozzi, F.J. – Bond Markets, Analysis and Strategies
13. Chandra, Prasanna – Investment Analysis and Portfolio Management
14. Gurusamy, S. – Financial Markets and Institutions
15. Krugman, P.R. & Obstfeld, M. – International Economics
16. International Monetary Fund – IMF Annual Reports
17. World Bank – Global Financial Development Report
18. Bank for International Settlements (BIS) – Annual Reports
19. SEBI – Annual Reports and Market Statistics
20. Government of India – Economic Survey of India

E-Learning Source:

https://swayam.gov.in/

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PSO1**	**PSO2**	**PSO3**
CO1	3	2	1	2	-	2	1	-	3	1	1
CO2	2	3	3	3	2	3	1	2	3	3	2
CO3	2	3	2	2	2	3	1	2	3	2	2
CO4	2	3	3	3	3	3	1	3	3	2	3
CO5	2	3	3	3	2	3	1	3	3	3	3

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2026-27							
Course Code	A0801003T/HE524	**Title of the Course**	Applied Statistics	**L**	**T**	**P**	**C**
Year	II	**Semester**	IV	**4**	**0**	**0**	**4**
Pre-Requisite	Graduation	**Co-requisite**	None				
Course Objectives	To develop students' understanding of applied statistical concepts and methods, and enable them to analyze, interpret, and apply statistical techniques in population studies, time series analysis, national income estimation, quality control, and other real-world economic and social problems.						

Course Outcomes

CO1	Given statistical data and information on the Indian statistical system, the student will design and explain the structure and functioning of central and state statistical machinery and sample survey methods with appropriate accuracy and relevance.
CO2	Using population and census data, the student will develop and apply methods for vital statistics and population projection with correct interpretation of demographic indicators.
CO3	Given time series data, the student will construct and analyze trend, seasonal, cyclical, and irregular components using suitable methods and correct statistical procedures.
CO4	Using national income and business data, the student will formulate and apply methods of national income estimation, quality control, forecasting, Pareto curves, Lorenz curves, and life tables with proper analysis and interpretation.
CO5	Given applied problems in economics, agriculture, business, and social research, the student will create and implement appropriate statistical frameworks and solutions with logical justification and practical accuracy.

Unit No.	Content of Unit	Contact Hrs.	Mapped CO
1	Statistical System in India Indian statistical machinery and its organisation at the central and state levels, National Sample Survey: design and technique, Agricultural statistics in India: nature of crop estimates, estimation of area and yield, Industrial statistics and Annual Survey of Industries, Statistics of prices, wages, trade, and transport.	8	CO1
2	Population Statistics Vital statistics and their importance, Computation of birth rate, death rate, and survival rate, Methods of population projection, Population census in India: meaning, features, and significance.	8	CO2
3	Time Series Analysis Meaning and components of time series, Trend measurement and methods of computing trend, Seasonal variations and methods of calculating seasonal indices, Cyclical fluctuations and irregular fluctuations, Importance of time series analysis in economic and statistical studies.	8	CO3
4	National Income and Quality Control National income statistics and related aggregates, Methods of measuring national income, Statistical Quality Control: meaning and uses, Construction and use of control charts, Business forecasting: tools and methods, Pareto curve and Lorenz curve, Construction of life tables.	8	CO4
5	Applied Statistical Techniques Integration of statistical methods in economic and business analysis, Interpretation and use of official statistics, Practical applications of population, income, and time series statistics, Use of statistical tools in policy, planning, and forecasting, Review of important statistical methods for applied research.	8	CO5

Reference Books:

1. Gupta S.P. and Gupta M.P. : Business Statistics
2. Elhance, D.N. : Fundamental of Statistics.
3. Sancheti & Kapoor : Statistics- Theory methods & Applications.
4. Singh, A.K. and Masood Khalid: Statistical Methods
5. Roy, Ramendu: Statistics
6. Freund J.E (2001): Mathematical Statistics, Prentice Hall of India
7. Goon A.M Gupta M.K., Das Gupta, B.(1991):Fundamentals of Statistics,Vol.- Iworld Press Calcutta.
8. Hodges J.L and Lehman E.L (1964): Basic concepts of probability and Statistics, Holden Day
9. Mood A.M, Graybill F.A and Boes D.C (1974): Introducing to the Theory of Statistics

E-Learning Source:

https://swayam.gov.in/ ; http://www.ignouhelp.in/ignou-study-material/

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	2	3	3	2	2	3	2	2
CO2	2	3	2	2	2	3	3	3	2	1	3
CO3	1	3	2	1	1	3	3	3	3	2	3
CO4	3	2	1	1	1	3	3	3	1	2	2
CO5	2	3	2	1	1	3	3	3	3	3	3

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2026-27							
Course Code	A0801004T/HE525	**Title of the Course**	Industrial Economics	**L**	**T**	**P**	**C**
Year	II	**Semester**	IV	**4**	**0**	**0**	**4**
Pre-Requisite	Graduation	**Co-requisite**	None				
Course Objectives	To familiarize students with the concepts of industrial economics and develop their ability to understand, analyze, and evaluate the behavior, structure, performance, and development of industrial sectors, enabling informed decision-making in policy and industry contexts.						

Course Outcomes	
CO1	Students will be able to explain basic concepts and evolution of industrial economics when given theoretical questions, with satisfactory level of performance.
CO2	Students will be able to analyze market concentration, pricing and regulatory framework when given numerical and case-based problems, with satisfactory level of performance.
CO3	Students will be able to apply industrial location theories to determine location decisions when given diagrams and applied questions, with satisfactory level of performance.
CO4	Students will be able to evaluate sources of industrial finance and MSME challenges when given case studies and short questions, with satisfactory level of performance.
CO5	Students will be able to examine industrialization and industrial policy impacts when given theoretical and applied questions, with satisfactory level of performance.

Unit No.		**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1	Introduction	Basic Concepts and Definitions of Industrial Economics, Evolution and Importance of Industrial Economics, Relationship with other Branches of Economics, Appraisal of Important Indian Industries PSUs, Role of Entrepreneurship in Industrial Development	7	CO1
2	Market Concentration	Measurement of Concentration and Monopoly Power, Concentration and Market Performance of the Firm, Product Pricing Theory, The Indian Regulatory Framework	8	CO2
3	Industrial Location Theories	Determinants of Industrial Location - Technical, Economic, Infrastructural and other factors. Theories of Industrial Location - Weber, August Losch, Sargant Florence, Measurement of Industrial Performance Indicators	9	CO3
4	. Source of Industrial Finance	Necessity and significance of Industrial Finance, Specialized Institution of Industrial Finance. Challenges finance before tiny and MSMEs. Role of FDI and FII to develop industry	8	CO4
5	Industrialization & Industrial Policy	Industrialization: Rationale, Objectives, Strategies and Policies. Industrialization and Regional Development. Employment Implications of Industrialization. Need for Government Intervention in Industry. New Industrial Policy of India.	9	CO5

Reference Books:

1. Barthwal, R. R. (2010). *Industrial Economics: An Introductory Text Book*. New Age International Publishers.
2. Cherunilam, F. (2017). Industrial Economics: Indian Perspective. Himalaya Publishing House.
3. Kuchhal, S.C.: Industrial Economy of India, Chaitanya Publishing HouseAllahabad
4 Singh, A., & Singh, A. (2015). *Industrial Economics*. Deep & Deep Publications.
5 Jain, T. R., & Kaur, G. (2018). *Industrial Economics*. VK Global Publications.
6 Cabral, L. (2017). *Introduction to Industrial Organization*. MIT Press.
7 Carlton, D. W., & Perloff, J. M. (2015). *Modern Industrial Organization*. Pearson.
8 Tirole, J. (1988). *The Theory of Industrial Organization*. MIT Press.
9 Hay, D. A., & Morris, D. J. (1991). *Industrial Economics: Theory and Evidence*. Oxford University Press.
10 Lipczynski, J., Wilson, J., & Goddard, J. (2017). *Industrial Organization: Competition, Strategy, Policy*. Pearson.

E-Learning Source:

- Swayam , Coursera

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PSO1**	**PSO2**	**PSO3**
CO1	3	3	-	2	-	-	-	2	3	3	-
CO2	3	3	-	2	2	2	-	-	3	-	2
CO3	3	3	-	2	2	2	3	-	3	3	3
CO4	3	3	-		3	2	3	-	3	3	3
CO5	3	3	-	-	-	-	-	-	3	3	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2026-27							
Course Code	A0801005T/HE526	**Title of the Course**	**Economics of Infrastructure**	**L**	**T**	**P**	**C**
Year	II	**Semester**	IV	**4**	**0**	**0**	**4**
Pre-Requisite	Graduation	**Co-requisite**	None				
Course Objectives	In case of developing countries, lack of adequate infrastructure has been held as a major obstacle to growth. The emphasis of this paper is on concepts and introduction of various tools required for policy analysis and empirical research in infrastructural economics. This paper would also help the students to understand the strength of infrastructure- physical and social in the process of economic development.						

Course Outcomes	
CO1	Given the basic concepts of infrastructure and economic development, students will be able to explain the nature, types, and economic characteristics of infrastructure and the role of public utilities and public-private partnerships in infrastructure development.
CO2	Given the pricing issues in public utilities, students will assess the peak-load and off-peak load problems and evaluate different pricing methods such as marginal cost pricing and other pricing strategies.
CO3	Provided the structure and functioning of transport and communication sectors, students will analyze transport costs, pricing policies, and the role of telecommunications and postal services in economic development.
CO4	With the concepts of energy economics, students will evaluate the importance of energy in economic development, factors determining energy demand, and the relative economics of different power generation sources.
CO5	Given renewable and non-conventional energy sources, students will assess the challenges and prospects of rural electrification, national power grid development, and recent initiatives in the oil and gas sector.

Unit No.	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1.	Introduction: Infrastructure and economic development; Infrastructure as a public good; Economic characteristics and types of infrastructure; Public utilities – Rationale of state provision; special characteristics of public utilities. Public-private partnership investment in infrastructure.	08	CO1
2.	The peak-load-Off-peak load Problem, Marginal Cost Pricing vs. other methods of pricing in public utilities; Social infrastructure – organization and financing of supply of social services, Private vs. Public sector financing.	08	CO2
3.	Transport and communication: the structure of Transport Costs and Location of Economic Activities. The supply of transport, Pricing policy; Cost Levels and Structure-Road Transport. Introduction to the setting of postal tariffs; Criteria for Fixation of Postal Tariffs, Cost and Pricing in the telecommunications Industry; Telecommunications in India; New Telecom Policy.	08	CO3
4.	Energy and Electricity Primacy of Energy in the Process of Economic Development. Factors Determining Demand for Energy; Effects of energy shortages, Energy Conservation; The Relative Economics of Thermal, Hydel and Nuclear Power Plants.	08	CO4
5.	Renewable and Non-conventional Sources of Energy, rural electrification in India- Problems & prospects. The Case for a National Power Grid. Electricity Policy- Main Features, Oil & gas- Recent Initiatives, Pricing Problem.	08	CO5

Reference Books:

1. Crew, M.A. and P.R. Kleindorfer (1979), Public Utility Economics, Macmillan, London.
2. Indian Council of Social Sciences Research (ICSSR) (1976), Economics of Infrastructure, Vol. VI, New Delhi.
3. National Council of Applied Economic Research (NCAER) (1996), India Infrastructure Report: Policy Implications for Growth and Welfare, NCAER, New Delhi.
4. Pachauri, R.K (Ed), Energy Policy for India, Macmillan Co of India, New Delhi.
5. Parikh, K.S. (Ed.) (1999), India Development Report-1999-2000, Oxford University Press, New Delhi.
6. Turvey, R. (Ed.) (1968), Public Enterprises, Penguin, Harmondsworth.

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Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO / CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PSO1**	**PSO2**	**PSO3**
CO1	3	2	1	2	2	1	2	2	3	2	2
CO2	3	3	1	2	1	1	1	2	3	2	2
CO3	3	3	2	2	1	1	1	2	3	2	3
CO4	3	2	1	2	2	1	3	2	3	2	2
CO5	3	2	1	2	2	1	3	2	3	2	3

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2026-27							
Course Code	A0801006R/HE591	**Title of the Course**	**Dissertation and Viva-Voce**	**L**	**T**	**P**	**C**
Year	II	**Semester**	IV	**2**	**0**	**2**	**4**
Pre-Requisite	Graduation	**Co-requisite**	None				
Course Objectives	Students will learn the skills of formulation of research problem, objectives, hypotheses and also the skills of data collection, analysis, and interpretation and prepare them for writing the research proposal based on the understanding of the subject.						

Course Outcomes	
CO1	To enable postgraduate students with guidance and support to conduct independent research and produce a dissertation on a chosen topic within their field of study.
CO2	Students will develop their research skills, critical thinking abilities, and scholarly writing proficiency
CO3	The course will cover the various stages of the research process, from topic selection and proposal writing to data collection, analysis, and the final write-up of the dissertation.

Unit No.	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1.	**Introduction:** Introduction of dissertation, Steps, ethics, and writing dissertation	20	CO1
2.	**Literature:** Finalizing topic, literature and introduction, deciding methodology, data collection and data analysis		CO2
3.	**Final Completion of the work and submission.** The Dissertation outcomes may be reported in the following form as per the norms : Chapter-1: Introduction & Review of Literature; Chapter-2: Research Methodology; Chapter-3: Conceptual & Theoretical Description; Chapter-4: Analysis and Interpretations; Chapter-5: Conclusion, Suggestions & Scope for further research; References, Annexure, etc.		CO3

Reference Books:

1. Crew, M.A. and P.R. Kleindorfer (1979), Public Utility Economics, Macmillan, London.
2. Indian Council of Social Sciences Research (ICSSR) (1976), Economics of Infrastructure, Vol. VI, New Delhi.
3. National Council of Applied Economic Research (NCAER) (1996), India Infrastructure Report: Policy Implications for Growth and Welfare, NCAER, New Delhi.
4. Pachauri, R.K (Ed), Energy Policy for India, Macmillan Co of India, New Delhi.
5. Parikh, K.S. (Ed.) (1999), India Development Report-1999-2000, Oxford University Press, New Delhi.
6. Turvey, R. (Ed.) (1968), Public Enterprises, Penguin, Harmondsworth.

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	Course Articulation Matrix: (Mapping of COs with POs and PSOs)									
PO-PSO / CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PSO1**	**PSO2**	**PSO3**
CO1	3	2	1	2	2	1	2	2	3	2	2
CO2	3	3	1	2	1	1	1	2	3	2	2
CO3	3	3	2	2	1	1	1	2	3	2	3

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**