Value Added Course (s)
SEMESTER-I

	Sustainable Development

Maximum Marks:50 **Written exam:35(2 hrs)**
Credits:2 **Internal assessment:15**

Note for paper setter

1. Five Questions will be set in all and students will be required to attempt 3 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3x5=15 marks).
3. From the remaining four questions, students will attempt 1 out of 2 questions from each of the two units (10 marks each)

Course Outcomes

CO1: Analyze the complex interrelationships between environmental systems, economic growth, and social well-being (ecology, economy, and equity).
CO2: Apply critical thinking to identify sustainability challenges and evaluate solutions relating to industrialization, biodiversity loss, and urbanization.
CO3: Develop, design, and implement sustainability indicators and action plans, including eco-tourism, community empowerment, and corporate sustainability strategies.

Unit I

Introduction Sustainable Development- Definition, Principles of Sustainable Development; History and emergence of the concept of Sustainable Development; Environmental issues and crisis; Sustainable Development Programs and Policies.

Unit II

SDGs & MDGs Evolution of Millennium and Sustainable development Goals, Millennium Development Goals, Sustainable Development Goals.

Suggested Readings

- Sachs, J. D. (2015). *The age of sustainable development*. Columbia University Press.
- World Commission on Environment and Development. (1987). *Our common future* (The Brundtland Report). Oxford University Press.
- United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development.*

SEMESTER-III

	Indian Budgetary System

Max. Marks: 50 **Written Exam: 35 (2 Hours)**
Credits: 2 **Internal Assessment: 15**

Note For the paper Setter

1. Five Questions will be set in all and students will be required to attempt 3 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3x5=15 marks).
3. From the remaining four questions, students will attempt 1 out of 2 questions from each of the two units (10 marks each)

Course Outcomes

CO 1: Understand the Financial Planning role of the Government in India

CO 2: Analyze Budgetary Practices and Frameworks in India

CO 3: Understand the Budget Lifecycle in India

CO 4; Identify and describe the core components of the budget in India

UNIT – I

Budget: Concept, Constitutional provisions of Budget in India. Need, Objectives and functions of Government Budget, Brief description of Budget Documents and Components of Government Budget in India. Concepts of Balanced, Surplus and Deficit budget., Various types of deficits and impact of fiscal deficit

UNIT – II

Union budget and Interim Budget, Budget making process in India: Budgetary cycle, Stages of enactment of Budget, Others Grants, Actual, Revised and budget estimates, Policy highlights of the current Union Budget (brief outline), Analysis of impact of Current Union Budget mainly with reference to key sectors (In brief)

NOTE:-

The students to be guided towards understanding Union budget and its impact through student centric group discussions and debates. This activity may be included in the internal assessment process.

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Suggested Readings

- Bagchi, A. (2003). *Fiscal federalism in India*. Oxford University Press.
- Bhatia, H. L. (2021). *Public finance* . Vikas Publishing House.
- Goel, S. L. (2002). *Public financial administration*. Deep & Deep Publications.
- Government of India. (2014). *Report of the Thirteenth Finance Commission*. https://fincomindia.nic.in
- Government of India. (2019). *Report of the Fourteenth Finance Commission*. https://fincomindia.nic.in
- Government of India. (2021). *Report of the Fifteenth Finance Commission (2021–26)*. https://fincomindia.nic.in
- Government of India, Ministry of Finance. (2026). *Economic survey of India (Annual)*. https://www.indiabudget.gov.in
- Government of India, Ministry of Finance. (2026). *Brief description of budget documents*. https://dea.gov.in/divisionbranch/brief-description-budget-documents
- Jha, R. (2002). *Modern public economics*. Routledge.
- Musgrave, R. A., & Musgrave, P. B. (1989). *Public finance in theory and practice* (5th ed.). McGraw-Hill Education.
- Saxena, A. (2011). Gender budgeting in India. *The Indian Journal of Public Administration*.
- Singh, S. K. (2014). *Public finance in theory and practice*. S. Chand Publishing.

Multidisciplinary Course (s)

SEMESTER-I

	Introduction to Economics

Max. Marks: 75 **Written Exam: 50 (2 Hrs.)**
Credits: 3 **Internal Assessment: 25**

Note for the paper Setter

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread over the entire syllabus (2x7=14 marks).
3. From the remaining six questions, students will attempt 1 out of 2 questions from each of the three units (12 marks each).

Course Outcomes

CO1: Understand the various concepts and theories of economics.
CO2: Develop ability to think critically and evaluate economic problems, with an emphasis on applying knowledge of fundamental principles of production and costs to a grasp of real-world issues.
CO3: Analyse given circumstances on a microeconomic level across a range of marketplaces.

UNIT – I

Definition of Economics, Nature and scope of Economics; Basic Economic Problem - Choice and Scarcity, Basic Central Problems of an Economy; Positive and Normative Economics; Types of Economies and their Characteristics; Microeconomics Vs Macroeconomics.

UNIT– II

Demand, Market Demand, Law of Demand, Demand Determinants; Supply, Market Supply, law of Supply; Price Mechanism and Working of Price Mechanism.
Macroeconomic Issues of an Economy; Circular Flow of Income – Two sector, Three sector and Four sector Model.

UNIT – III

Underdevelopment- Meaning and Characteristics; Economic Growth and Development
Meaning, Determinants of Economic Development, Obstacles of Economic Development, Sustainable Development- Meaning, Features, Importance.

Suggested Readings

- Koutsoyiannis, A. (1979). *Modern microeconomics* (2nd ed.). Macmillan Press.
- Lipsey, R. G., & Chrystal, K. A. (2014). *Economics*. Oxford University Press.
- Salvatore, D. (2006). *Microeconomics: Theory and applications*. Oxford University Press.
- Varian, H. R. (2003). *Intermediate microeconomics*. East-West Press.

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SEMESTER-II

	Financial Institutions and Market

Max. Marks: 75 **Written Exam: 50(2 hrs.)**
Credits: 3 **Internal Assessment: 25**

Note for the paper Setter

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread over the entire syllabus (2x7=14 marks).
3. From the remaining six questions, students will attempt 1 out of 2 questions from each of the three units (12 marks each).

Course Outcomes

CO1.Understanding the structure and functioning of financial markets.
CO2.Identify the instrument of capital market and money market.
CO3.It explains the role of financial system on economic development.
CO4.This will enable students to take the rational decision in financial environment

UNIT – I

Structure of Indian Financial System

An overview of the Indian financial system. Commercial Banking: Role of Banks. RBI: objectives and functions, NBFCs: types and difference between Banks and NBFCs, SEBI: objectives and functions

UNIT – II

Introduction to Financial Markets in India

Role and Importance of Financial Markets, Types of Financial Markets: Money Market; Call money market; treasury bill market; Capital Market; Linkages Between Economy and Financial Markets

UNIT – III

Introduction to Stock Markets

Major Instruments traded in stock markets- Equity Shares, Debentures, Exchange Traded Funds; Mutual Fund- types of Mutual Funds and different types of schemes; Corporate Bonds vs. Government Bonds.

Suggested Readings

- Bhole, L. M. (1999). *Financial institutions and markets*. Tata McGraw-Hill Company Ltd.
- Bhole, L. M. (2000). *Indian financial system*. Chugh Publications.
- Edminster, R. O. (1986). *Financial institutions, markets and management*. McGraw-Hill.
- Goldsmith, R. W. (1969). *Financial structure and development*. Yale University Press.
- Johnson, H. J. (1993). *Financial institutions and markets*. McGraw-Hill.
- Karker, P. T., & Zenios, S. A. (Eds.). (2000). *Performance of financial institutions*. Cambridge University Press.
- Khan, M. Y. (1996). *Indian financial systems*. Tata McGraw-Hill.
- Machiraju, M. R. (1999). *Indian financial system*. Vikas Publishing House.

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SEMESTER-III

	Drivers of Indian Economy towards Viksit Bharat

Max. Marks: 75 **Written Exam: 50(2 hrs.)**
Credits: 3 **Internal Assessment: 25**

Note for the paper Setter

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread over the entire syllabus (2x7=14 marks).
3. From the remaining six questions, students will attempt 1 out of 2 questions from each of the three units (12 marks each).

Course Outcomes

CO 1: Analyses the foundational and emerging drivers of India's economic growth.
CO2: Evaluate the role of education, healthcare, infrastructure, and innovation in development.
CO3: Critically assess national missions and policy frameworks like Atmanirbhar Bharat, Digital India, and Make in India.
CO4: Propose innovative models and reforms to support India's development journey.

UNIT – I

Historical Overview of India 's development journey since 1947.
Viksit Bharat vision 2047: Vision, objectives, and its implications for different sectors. Growth engines for Viksit Bharat, difference from previous growth models of India

UNIT – II

Agriculture and Rural economy transformation under Viksit Bharat and key challenges, Need and features of Agriculture Subsidy Reforms in Viksit Bharat, Agri-Tech and Entrepreneurship.
MSMEs as a growth engine and challenges, Opportunities and challenges in Education, Healthcare and Infrastructure. Housing and urban planning for inclusive growth.

UNIT – III

Key Initiatives of Viksit Bharat, Digital India and Technology- Impact of Technology on various sectors. Role of Startups and Innovation ecosystems. Digital Transformation, Role of Smart City Mission, Make in India: objective and outcomes

Suggested Readings

- Das, G. (2002). *India unbound*. Penguin Books.
- Government of India. (2025). *Economic survey of India 2024–25*. Ministry of Finance. https://www.indiabudget.gov.in/
- Government of India. (2025). *Digital India*. Ministry of Electronics and Information Technology. https://www.digitalindia.gov.in/
- Government of India. (2025). *PM Gati Shakti: National master plan*. Government of India. https://gati.shakti.gov.in/
- International Monetary Fund. (2025). *India: Staff report / Article IV consultation reports*. https://www.imf.org/
- Joshi, V. (2015). *India's long road: The search for prosperity*. Penguin Books.
- NITI Aayog. (2025). *Viksit Bharat @2047 vision documents*. Government of India. https://www.niti.gov.in/
- Sharma, M. (2021). *Restart: The last chance for the Indian economy*. Juggernaut Books.
- World Bank. (2025). *World development indicators / India country reports*. https://www.worldbank.org/

SEMESTER-IV

	Indian Economic Policy

Max. Marks: 75 **Written Exam: 50 (2 hrs.)**
Credits: 3 **Internal Assessment: 25**

Note for the paper Setter

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 7 short answer type questions of 2 marks spread over the entire syllabus (2x7=14 marks).
3. From the remaining six questions, students will attempt 1 out of 2 questions from each of the three units (12 marks each).

Course Outcomes

CO 1: Understand Structural Changes and Policy Institutions in the Indian Economy
CO 2: Understand and Evaluate the Impact of Economic Reforms in India
CO3: Understand the goals, tools, and effectiveness of India's fiscal and monetary policies
CO 4: Analyze Sector-Specific Policies and Performances
CO 5: Understand Recent Fiscal, Financial, and Trade Reforms

UNIT – I

Structural change in Indian Economy and its emerging sectors. Economic Planning in India. NITI Aayog.
Economic Reforms in India. Liberalization, Privatization and Globalization. Sustainable development policies in India – SDGs (in brief), green growth strategy, energy transition policies, Smart Cities Mission, AMRUT, Green bonds and Mission LiFE policies (all policies to be done in brief),

UNIT – II

Objectives and instruments of Fiscal Policy and Monetary Policy in India, Indian Agriculture Policies and performance, Industrial policies and performance, Private and public sector-Industrial sickness, Role of Information Technology in Industrial Development..

UNIT – III

Structure and direction of foreign trade in India, Importance of foreign trade for a developing economy, Foreign direct Investments, Official development assistance, Globalization and its impact on Indian Economy, WTO and its impact on the different sectors of the economy, World Bank and India.

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Suggested Readings

- Datt, G., & Mahajan, A. (2020). *Datt & Sundharam's Indian economy*. S. Chand Publishing House.
- Dhar, P. K. (2020). *Indian economy: Its growing dimensions*. Kalyani Publishers.
- Meier, G. M. (1987). *Pioneers in development*. Oxford University Press.
- Ministry of Finance. (2025). *Economic survey*. Government of India.
- Mishra, S. K., & Puri, V. K. (2020). *Indian economy*. Himalaya Publishing House.
- Rameshan, P. (2008). *WTO, India and emerging area of trade: Challenges and strategies*. Excel Books.
- Stiglitz, J. E. (2002). *Globalization and its discontents*. Penguin Books.

Ability Enhancement Course (s)
SEMESTER-I

	Economics of Capital Market in India

Maximum Marks:50 **Written exam:35(2 hrs.)**
Credits:2 **Internal assessment:15**

Note for paper setter:

1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3*5=15 marks).
3. For the remaining three questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Course Outcomes

CO1: Develop in-depth knowledge of SEBI regulations, investor protection guidelines, and the legal framework governing capital markets.
CO2: Acquire skills in fundamental and technical analysis, portfolio management, and financial research to evaluate company performance and securities.
CO3: Gain hands-on experience in trading mechanisms, Demat systems, clearing, and settlement processes, often using simulation tools.

UNIT –I

Capital Market in India:

Capital Market- Meaning & Significance; Components of Capital Market- Primary Market (Key features, instruments and functions) and Secondary Market (Key features, institutions and functions); Investment Process in Stock Market- Pre – requisites for investing; Bank Account, Demat Account, Trading Account; Process of buying and selling in Stock Market (steps in brief); Initial Primary Issue (IPO)- Concept, need and significance, SEBI regulations for IPO; Role of Capital Market in Economic Development.

UNIT – II

Stock Exchanges in India-

Meaning, functions & Significance of stock exchanges; BSE & NSE- Organisation and Management; Security Analysis for investment in shares (steps in brief); Economic Analysis (GDP, Inflation, Interest Rate); Industry Analysis and Company Analysis; Financial Analysis- Reading Balance Sheet, Income statement, Cash Flow Statement; Ratio Analysis- P/E Ratio, P/B Ratio, Debt – to – Equity ratio, ROE, ROCE, EPS; Capital Market and Vision of Viksit Bharat 2047.

Suggested Readings

- Agarwalla, S. K., & Agarwalla, K. N. (2019). *Financial markets in India*. IIM Ahmedabad.
- Bhole, L. M. (2017). *Financial institutions and markets: Structure, growth and innovations* (6th ed.). McGraw Hill Education.
- Khan, M. Y. (2019). *Indian financial system* (11th ed.). McGraw Hill Education.
- Pathak, B. V. (2018). *The Indian financial system: Markets, institutions and services* (5th ed.). Pearson Education.

SEMESTER-II

	Economics of Mutual funds in India

Maximum Marks:50 **Written exam:35(2 hrs.)**
Credits:2 **Internal assessment:15**

Note for paper setter:
1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3*5=15 marks).
3. For the remaining three questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Course Outcomes
CO1. Understand the concept and working of Mutual Funds.
CO2. Differentiate between various types of Mutual Funds.
CO3. Understand the regulatory and legal structure of Mutual Funds.
CO4. To comprehend various evaluation methods of Mutual Funds.

UNIT – I

Mutual Funds – Concept, Classification of mutual funds in India, Functioning of Mutual Funds, different ways to investment in Mutual Funds, Advantages of mutual funds, Risks in investing in mutual funds, Factors influencing the choice of Mutual Funds, Role of Mutual Funds in Capital Markets development, Role of Mutual Funds in Economic Growth; Role of Mutual Funds – From financial inclusion to financial wellbeing in the vision of Viksit Bharat

UNIT – II

Evaluation of Mutual Funds – Measures of returns and risk in Mutual Funds schemes.
Net Asset Value (NAV): Concept, computation, factors impacting NAV; Systematic Investment Plan (SIP), Systematic Transfer Plan (STP), Systematic Withdrawal Plan (SWP). Economic Rationale and Need for regulation of Mutual Funds, Role of Association of Mutual Funds in India (AMFI), Functions of regulatory agencies for Mutual Funds (SEBI & RBI).

Suggested Readings

- Chandra, P. (2000). *Investment analysis and portfolio management*. Tata McGraw-Hill Publishing Company.
- Damodaran, A. (2012). *Investment valuation: Tools and techniques for determining the value of any asset* (3rd ed.). Wiley.
- Fischer, D. E., & Jordan, R. J. (1996). *Security analysis and portfolio management*. Prentice Hall.
- Gupta, A. (2002). *Mutual funds in India: A study of investment management*. Anmol Publications.
- Sadhak, H. (2003). *Mutual funds in India*. Response Books.
- Sankaran, S. (2018). *Indian mutual funds handbook: A guide for industry professionals and intelligent investors*. Vision Books.
- Sankaran, S. (2019). *Indian mutual funds handbook: A guide for industry professionals and intelligent investors* (2nd ed., 3rd rev. ed.). Vision Books.

SEMESTER-IV

	Entrepreneurship

Max. Marks: 50 **Written Exam: 35 (2 Hours)**
Credits: 2 **Internal Assessment: 15**

Note for paper setter:
1. Seven Questions will be set in all and students will be required to attempt 4 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 3 marks spread over the entire syllabus (3*5=15 marks).
3. For the remaining three questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Course Outcomes
CO 1: Understand the Concept of Entrepreneurship and recognize the essential traits and competencies required for successful entrepreneurship
CO 2: Analyze the Factors Influencing Entrepreneurial Emergence and Growth
CO 3: Evaluate the concept of Sustainable Entrepreneurship
CO 4: Compare and contrast the entrepreneurial and managerial mindsets

UNIT – I

Entrepreneurship- Concept, Types, traits of successful entrepreneurs (along with class discussion on success stories of few Indian Entrepreneurs – Nykaa, Oyo rooms, Paytm, Ola cabs, Flipkart etc.), factors impacting emergence of entrepreneurship, stages of entrepreneurial growth and development, barriers to Entrepreneurship,
Sustainable Entrepreneurship- its principles and barriers.

UNIT – II

Entrepreneurial decision-making process, Factors influencing entrepreneurial decisions, Process of setting up a new business enterprise, Government Schemes/ Programs for entrepreneurs in India in last one decade, Importance of entrepreneurs in circular economy, Role of entrepreneurship in economic development,

Suggested Readings

- Desai, V. (2019). *Dynamics of entrepreneurial development and management*. Himalaya Publishing House.
- Jain, R. (2001). *Planning a small scale industry: A guide to entrepreneurs*. S. S. Books.
- Katz, J., & Green, R. (2014). *Entrepreneurial small business* (4th ed.). McGraw-Hill.
- Khanka, S. S. (2020). *Entrepreneurship development*. S. Chand Publishing.
- Kumar, S. A. (2013). *Entrepreneurship in small industry*. Discovery Publishing House.
- McClelland, D. C., & Winter, D. G. (1969). *Motivating economic achievement*. Free Press.
- Charantimath, P. M. (2018). *Entrepreneurship development and small business enterprises* (3rd ed.). Pearson Education.
- Hisrich, R. D., Peters, M. P., & Shepherd, D. A. (2020). *Entrepreneurship* (11th ed.). McGraw-Hill Education.

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Skill Enhancement Courses (s)

SEMESTER-II

	Introduction to Research Methodology

Maximum Marks: 50 **External written Exam: 25(2 hrs.)**
External Practical: 10 **Internal Assessment: 10**
Internal Practical: 05 **Credits:2**

Note for Paper Setter
1. Five Questions will be set in all, and students will be required to attempt 3 questions.
2. Question No. 1 will be compulsory and will consist of 3 short answer type questions of 3 marks spread over the entire syllabus (3x3=09 marks).
3. For the remaining two questions, students will attempt 1 out of 2 questions from each of the two units (08 marks each).

Course Outcomes: After completing this course, the learner will be able to:
CO1.Understanding of the research process, including its types, objectives, and design (qualitative and quantitative).
CO2. Analyse key concepts like variables and hypotheses, sampling techniques, and data collection methods (primary and secondary).
CO3. Students will be able to design studies, choose suitable methods, and collect data effectively.

NOTE FOR PRACTICAL WORK: Students will be required to undertake a small research project involving formulation of a research problem, preparation of questionnaire/schedule, collection of primary or secondary data, basic analysis, and presentation of findings in the form of a report.

UNIT-I

Research – Meaning, Objectives and Types, Research Process, Criteria of a Good Research. Research Design: Meaning, Need, Types, Approaches to Research Design: Qualitative and Quantitative, Basic Concepts: Dependent and Independent Variables, Research Hypothesis

UNIT-II

Sampling: Meaning, Sampling Methods- Probability and Non- Probability, Sampling and Non- Sampling Error, Methods of Data Collection:
Collection of Primary Data- Observation, Interview, Questionnaire and Schedule Methods in brief, Collection of Secondary Data: Various Sources, Selection of appropriate Method for Data Collection.

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Suggested Readings

- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques* (2nd ed.). New Age International Publishers.
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill-building approach* (7th ed.). Wiley.
- Burns, R. B. (2000). *Introduction to research methods* (4th ed.). SAGE Publications.
- Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches* (7th ed.). Pearson.
- Babbie, E. (2013). *The practice of social research* (13th ed.). Cengage Learning.
- Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press.
- Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson Education.

	Digital Economics

Maximum Marks: 50 **External written Exam: 25(2 Hrs.)**
External Practical: 10 **Internal Assessment: 10**
Internal Practical: 05 **Credits:2**

Note for the paper Setter
1. Five Questions will be set in all, and students will be required to attempt 3 questions.
2. Question No. 1 will be compulsory and will consist of 3 short answer type questions of 3 marks spread over the entire syllabus (3x3=09 marks).
3. For the remaining two questions, students will attempt 1 out of 2 questions from each of the two units (08 marks each).

Course Outcomes
CO1: Understand the defining features and economics of digital markets and platforms.
CO2: Analyze market power, monopolistic tendencies, and antitrust issues in the digital economy.
CO3: Evaluate the role of government in regulating digital platforms and addressing policy challenges.
CO4: Assess the impact of digital transformation on innovation, productivity, and socio-economic policies.

NOTE FOR PRACTICAL WORK: Students shall conduct a mini project or case study on digital markets or platforms, including analysis of pricing strategies, network effects, market structure, or regulatory issues, using primary or secondary data, and present the findings in a written report or presentation.

UNIT- I

Introduction to Digital Economics

Definition and scope, Characteristics of digital markets, Economics of digital platforms (e.g.. network effects, multi-sided markets), Case studies of major digital platforms (e.g.. Google, Amazon, Facebook), Characteristics of information goods (e.g., non-rivalry, non-excludability), Pricing strategies for digital products, The role of intellectual property in the digital economy.

UNIT- II

Digital Marketplaces and E-Commerce

Market power and monopolistic tendencies in digital markets, Antitrust concerns related to digital platforms, Government's role in regulating the digital economy, Policy challenges in the digital age (e.g., taxation, labor market impacts), The impact of digital transformation on innovation and productivity

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Suggested Readings

- Acemoglu, D., & Restrepo, P. (2018). *Artificial intelligence, automation, and work* (NBER Working Paper No. 24196). National Bureau of Economic Research.
- Autor, D. H. (2015). Why are there still so many jobs? The history and future of workplace automation. *Journal of Economic Perspectives, 29*(3), 3–30.
- Belleflamme, P., & Peitz, M. (2015). *Industrial organization: Markets and strategies* (2nd ed.). Cambridge University Press.
- Bloom, N., Garicano, L., Sadun, R., & Van Reenen, J. (2014). The distinct effects of information technology and communication technology on firm organization. *Management Science, 60*(12), 2859–2885.
- Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. W. W. Norton & Company.
- Chaffey, D., & Ellis-Chadwick, F. (2019). *Digital marketing: Strategy, implementation, and practice* (7th ed.). Pearson Education.
- Cockfield, A. J., Hellerstein, W., Millar, R., & Waerzeggers, C. (2013). *Taxing global digital commerce*. Kluwer Law International.
- Crémer, J., de Montjoye, Y.-A., & Schweitzer, H. (2019). *Competition policy for the digital era*. European Commission.
- Degryse, C. (2016). *Digitalisation of the economy and its impact on labour markets* (Working Paper 2016.02). European Trade Union Institute.
- Evans, D. S., & Schmalensee, R. (2016). *Matchmakers: The new economics of multisided platforms*. Harvard Business Review Press.
- Gasser, U., & Palfrey, J. (2008). *Born digital: Understanding the first generation of digital natives*. Basic Books.
- Goldfarb, A., Greenstein, S. M., & Tucker, C. E. (2019). *The economics of artificial intelligence: An agenda*. University of Chicago Press.

SEMESTER-III

	Data Analysis

Maximum Marks: 50 **External written Exam: 25 (2 Hrs)**
External Practical: 10 **Internal Assessment: 10**
Internal Practical: 05 ……………………………………………………………Credits:2

Note for Paper Setter

1. Five Questions will be set in all, and students will be required to attempt 3 questions.
2. Question No. 1 will be compulsory and will consist of 3 short answer type questions of 3 marks spread over the entire syllabus (3x3=09 marks).
3. For the remaining two questions, students will attempt 1 out of 2 questions from each of the two units (08 marks each).

Course Outcomes

CO 1: Understand and apply the measures of central tendencies and interpret their significance in summarizing data sets.
CO 2: Compute and interpret mean deviation, standard deviation, and coefficient of variation to assess the spread and consistency of data.
CO 3: Understand the concept of correlation and calculate & interpret correlation coefficients.
CO 4: Understand the concepts of simple and multiple linear regression along with the application of simple linear regression and interpret the regression coefficient
CO 5: Understand the key elements of hypothesis testing

NOTE: The theory paper will be set on the basic concepts and simple numerical examples.

NOTE FOR PRACTICAL WORK: In the practical classes the students to learn the following concepts through MS Excel. Internal practical and External practical exam to include the performance on practical usage of MS Excel.

UNIT-1

Basic Measures of Central Tendency and Dispersion- Arithmetic Mean, Median, Mode, Mean Deviation, Standard Deviation, Coefficient of Variation and Lorenz Curve.
Correlation: Meaning and types, Methods of measurement: Graphic, Algebraic (Karl Pearson, Spearman)

UNIT-2

Basic Concept of Simple and Multiple Linear Regression, Application of simple linear regression, Coefficient of determination, Difference between correlation and regression
Testing of Hypothesis- Basic Concept of Hypothesis testing (Null Hypothesis, Alternative Hypothesis, Type-1 and Type -II Errors, Level of Significance, Critical Region or Rejection Region, Critical Value), Procedure of testing a hypothesis

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Suggested Readings

- Aggarwal, B. L. (2006). *Basic statistics*. New Age International Publishers.
- Gupta, S. C., & Kapoor, V. K. (2007). *Fundamentals of applied statistics*. S. Chand and Sons.
- Naghshpour, S. (2012). *Statistics for economics*. Business Expert Press.
- Sharma, J. K. (2012). *Business statistics*. Dorling Kindersley (India) Pvt. Ltd.