Department of Management Information Systems (MIS)

Faculty of Business Studies
Begum Rokeya University, Rangpur
Rangpur-5404, Bangladesh

Outcome Based Education (OBE) Curriculum

For

Bachelor of Business Administration (BBA) Program

Effective From Academic Session:

2024-2025, 2025-2026, 2026-2027 and 2027-2028

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1. INTRODUCTION

MIS at BRUR: A New Beginning

Management Information Systems (MIS) is an academic discipline that gives a blend of technology and business knowledge. In the highly competitive market, there is no alternative to having cross-sectional knowledge. This department deals with the study of people, technology, organizations, management, and the dynamic inter-dependencies among these components where students can learn both theoretical and practical perspective that accelerates both interpersonal and technical skills necessary for business graduates.

The Department of MIS is currently teaching for the degree of BBA and MBA and planning to start M.Phil. as well as Ph.D. as per the rules and regulations of the Begum Rokeya University, Rangpur. It will also offer special programs, conferences, seminars and short courses on emerging topics of Management Information Systems (MIS). The Department will give attention towards fundamental change in the teaching-learning methods in an endeavor to cope with the changing demands for job-oriented business education and to enable the graduates of the Department to face the challenges in the competitive world of the new millennium.

Vision of the department

The department goes ahead with the vision of –
Delivering outstanding business education combined with information systems to promote research, innovation, and the advancement of a sustainable, prosperous society.

Mission of the department

The mission of the department includes a variety of aspects as follows –

I. To provide age-demanding business education blended with Information Systems.
II. To make competent and skilled human resource for future business transformation.
III. To create an environment for excellence in research and innovation.

2. BBA PROGRAM

BBA in MIS is an undergraduate program of **132 Credit Hours to be completed in four years divided into eight semesters.** It is a terminal degree. The students of BBA are exposed to various business and information technology related courses in order to enable them to equip themselves with modern knowledge in business and technology. In most of courses computer lab will used along with appropriate software. Gradually, Computer lab will be upgraded.

Vision of the Program

To be a leading program in delivering innovative and technology-integrated business education that cultivates ethical leaders, drives sustainable development, and fosters impactful research for a prosperous society.

Mission of the Program

The BBA program is committed to:

i) Deliver contemporary business education

ii) Develop competent professionals

iii) Ensure ethical and sustainable practice

iv) Foster research and innovation

v) Preparing future-ready graduates

Program Educational Objectives (PEOs)

The program's educational objectives are -

PEO 1: To provide graduates a strong foundation in business and information systems, enabling them to apply theoretical and practical knowledge to solve complex business problems in a technology-driven environment.

PEO 2: To demonstrate leadership, entrepreneurial, and innovative capabilities to manage change and drive business transformation in both local and global contexts.

PEO 3: To uphold ethical standards and promote sustainable business practices among graduates while making informed and responsible decisions that benefit organizations and society.

PEO 4: To prepare graduates in diverse career paths by utilizing analytical, technological, and communication skills that meet the evolving needs of employers and industries.

PEO 5: To engage in continuous learning and contribute to academic, organizational, and societal development through research, innovation, and advanced studies.

Program Learning Outcome (PLOs)

PLO 1: Students will acquire and apply strong foundational knowledge of information systems and business management to solve extant challenges in a technology-driven world.

PLO 2: Students will demonstrate leadership skills and adapt to emerging business transformations by integrating and applying innovative thinking, entrepreneurial and problem-solving skills, and technological solutions to drive sustainable growth.

PLO 3: Students will be competent, skilled, ethically sound, and equipped with the market-relevant expertise to thrive in dynamic and competitive job markets.

PLO 4: Students will develop knowledge regarding quality research and thus contribute to the organizational development and nation-building.

Graduate Profile

Graduates of the Bachelor of Business Administration (BBA) program will be equipped with a comprehensive set of skills and competencies essential for success in today's dynamic and technology-driven business environment. They will possess:

Fundamental ICT Skills: Proficiency in essential information and communication technologies to effectively operate in digital business environments and support data-driven decision-making.

Strategic Thinking: The ability to evaluate complex situations, anticipate future challenges, and develop long-term strategies aligned with organizational goals.

Creative Problem-Solving: An innovative mindset capable of identifying issues, generating solutions, and implementing effective responses in varied business contexts.

Analytical Ability: Competence in analyzing data, interpreting trends, and applying critical thinking to inform sound business judgments.

Communication Skills: Strong oral and written communication skills, enabling clear, persuasive, and professional interaction with diverse stakeholders.

Collaborative Learning and Teamwork: The capacity to work effectively in teams, embracing continuous learning and contributing positively to collective goals in a multicultural and interdisciplinary setting.

This graduate profile reflects the program's commitment to developing well-rounded, future-ready business professionals who can thrive in both local and global markets.

Mapping PEOs with Missions

[*attainment level used for departmental missions from 1 (weak)-3 (strong) correlation*]

Mission/PEOs	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5
M 1	3	2		2	1
M 2	2	3		3	1
M 3		2	3		3

Mapping PLOs with PEOs

[*attainment level used for PEOs with PLOS from 1 (weak)-3 (strong) correlation*]

PEOs/PLOSs	PLO 1	PLO 2	PLO 3	PLO 4
PEO 1	3		2	
PEO 2		3	3	
PEO 3		2	3	
PEO 4	1	2	3	
PEO 5				3

Structure of the Curriculum

Duration of the Program: 04 Years

Number of Semesters: 08

Total Number of Credit Hours Offered: 140 Credits

Credits Required to Earned for being Graduated: 140 Credits

Begum Rokeya University Rangpur
Department of Management Information Systems (MIS)

Course Structure

BBA PROGRAM COURSE STRUCTURE			
1st Year 1st Semester			
Course Code	**Course Title**	**Course Type**	**Credit**
MIS 1101	Introduction to Business	Theory	03
MIS 1102	Financial Accounting	Theory	03
MIS 1103	Principles of Management	Theory	03
MIS 1104	Computer Applications in Business	Theory	02
MIS 1105	Computer Applications in Business Lab	Lab	02
MIS 1106	Bangladesh Studies	Theory	03
Total Credit in 1st year 1st semester			**16**
1st Year 2nd Semester			
Course Code	**Course Title**	**Course Type**	**Credit**
MIS 1201	Business Mathematics	Theory	03
MIS 1202	Principles of Finance	Theory	03
MIS 1203	Business Communication	Theory	03
MIS 1204	Management Information Systems	Theory	03
MIS 1205	General Science & Environment	Theory	03
MIS 1206	Viva-Voce	Viva-Voce	2
Total Credit in 1st year 2nd semester			**17**
2nd Year 1st Semester			
Course Code	**Course Title**	**Course Type**	**Credit**
MIS 2101	Managerial Economics	Theory	03
MIS 2102	Data Structure and Algorithm	Theory	03
MIS 2103	Business and ICT Laws	Theory	03
MIS 2104	Principles of Marketing	Theory	03
MIS 2105	Calculus	Theory	03

Total Credit in 2nd year 1st semester			**15**
2nd Year 2nd Semester			
Course Code	**Course Title**	**Course Type**	**Credit**
MIS 2201	Entrepreneurship Development and Small Business Management	Theory	03
MIS 2202	Bank and Insurance Management	Theory	03
MIS 2203	Operations Management	Theory	03
MIS 2204	Auditing, Taxation and IT	Theory	03
MIS 2205	Programming Fundamentals	Theory	03
MIS 2206	Programming Fundamentals Lab	Lab	01
MIS 2207	Viva-Voce	Viva-Voce	02
Total Credit in 2nd year 2nd semester			**18**
3rd Year 1st Semester			
Course Code	**Course Title**	**Course Type**	**Credit**
MIS 3101	Human Resource Management	Theory	03
MIS 3102	Fundamentals of Information Security	Theory	03
MIS 3103	International Business	Theory	03
MIS 3104	Statistics for Business	Theory	03
MIS 3105	Programming for IS	Theory	03
MIS 3106	Programming for IS Lab	Lab	01
Total Credit in 3rd year 1st semester			**16**
3rd year 2nd Semester			
Course Code	**Course Title**	**Course Type**	**Credit**
MIS 3201	Database Management Systems	Theory	03
MIS 3202	Database Management Systems Lab	Lab	01
MIS 3203	Management Accounting	Theory	03

MIS 3204	Management Science	Theory	03
MIS 3205	Organizational Behavior	Theory	03
MIS 3206	Data Communication and Networking	Theory	03
Mis 3207	Viva-Voce	Viva-Voce	02
Total Credit in 3rd year 2nd semester			**18**
4th Year 1st Semester			
Course Code	**Course Title**	**Course Type**	**Credit**
MIS 4101	Big Data and Machine Learning	Theory	03
MIS 4102	System Analysis and Design	Theory	03
MIS 4103	System Analysis and Design Lab	Lab	01
MIS 4104	Project Management and Information Systems	Theory	03
MIS 4105	Supply Chain Management	Theory	03
MIS 4106	Business Research	Theory	03
MIS 4107	Industry Exploration Program	Practical	02
Total Credit in 4th year 1st semester			**18**
4th Year 2nd Semester			
Course Title	**Course Type**	**Course Type**	**Credit**
MIS 4201	Simulation and System Modeling	Theory	03
MIS 4202	Simulation and System Modeling Lab	Lab	01
MIS 4203	Enterprise Resource Planning	Theory	03
MIS 4204	Enterprise Resource Planning Lab	Lab	01
MIS 4205	Business Intelligence	Theory	03
MIS 4206	E-Business	Theory	03
MIS 4207	Strategic Management & Information Systems	Theory	03
MIS 4208	Viva-Voce	Viva-Voce	02
MIS 4209	Internship	Practical	03
Total Credit in 4th year 2nd semester			**22**
Total Credit in BBA			**140**

3. BBA (HON'S) OBE CURRICULUM

Course Code MIS 1101
Course Title: Introduction to Business
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

The course of Business Fundamentals and Ethics is planned to discuss essential elements of business organizations, methods of business operations, types of business ownership etc. The main emphasis is to be found on economic and social environments of business, as well as the management, finance, productions, marketing, insurance, Introducing Business Ethics, Environmental Issues, Ethics and Human Resource Management, Ethics and Marketing.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Foundation of Business and Economics:** Define and explain Business and Barter; Identify core people of business; Discuss goods and service, needs and wants, inflation, categories of resources; Understand fundamental concepts of Economic system	6	1 and 2
2	**Forms of Business ownership:** Analyze different factors to be analyzed before starting any business; Analyze different characteristics and legal procedures for starting proprietorship, partnership and large corporations; Discuss advantages and disadvantages of different types of business ownership; Understand the concept of merger and its types	6	1, 2 & 3
3	**Entrepreneurship, Franchising and small business:** Understand the qualities of successful entrepreneurs; Identify the risks associated with entrepreneurship; Explain different types of ownership; Fundamental concepts of Franchising, its advantages and disadvantages.	3	1, 2 & 3
4	**Social Responsibility and Ethics:** Definition of Social responsibility, Responsibility towards investors, Responsibility towards employees, Responsibility towards environment, Responsibility towards consumers. Definition of ethics and business ethics.	3	2
5	**International Business:** Understand the term International Business; Explain the reasons for involving in international business; Describe the concepts, regulations and laws of doing international business; Discuss how to adapt	3	1, 2 & 3

SN	CONTENTS	HOURS	CLOs
	marketing mix to foreign markets.		
6	**Fundamentals of Management:** Describe the concept and primary functions of management; Understand different levels of management and their functions; Explain different roles of managers in any organizations; Explain different management skills necessary for becoming a successful manager.	3	1, 2 & 3
7	**Human Relation and Motivation:** Describe the role of motivation in individual and organizational environment, Maslow's Needs Hierarchy, Mcgregor's theory X and theory Y, Herzberg's two factor model, Theory Z.	3	1,2 & 3
8	**Marketing Strategy:** Explain the Concepts of marketing; Explain the different strategies of marketing and 4ps of marketing; Understand segmentation, targeting and positioning; Explain the consumer buying decision process.	3	1, 2 & 3
9	**Introducing Business Ethics & Ethics and Marketing:** To define business ethics; To know the importance of business ethics; ethics in Marketing, fundamental aspects of Business, Business Ethics and Corporate Governance, ethics, To understand different philosophical approaches to business ethics.	5	1, 2 & 3
10.	**Industry Engagement** Students will be sent to different sole proprietorship/Company business organizations to know their entrepreneurship journey and their business and marketing strategy.	14	2 & 3

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	Understand basic concepts of Business and Economics.
CLO 2	Apply fundamental aspects of Business, Business Ethics and Corporate Governance.
CLO 3	Analyze advantages and disadvantages of various types of business (sole proprietorship, partnership, company, merger, franchising business).

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	3			
CLO 2		3	3	

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 3			3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Problem based Exercise	Question & Answer (theory)
CLO 2	Lecture, Discussion, Problem based Exercise, industry engagement	Question & Answer (theory), Report submission and presentation
CLO 3	Lecture, Discussion, Problem based Exercise, industry engagement	Question & Answer (theory), Report submission and presentation

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Class Test/ Assignment/ Presentation	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05			
Understand			05	05
Apply		05	05	05
Analyze			05	05
Evaluate				
Create				

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	10
Understand	10
Apply	20

Bloom Criteria	Score for the Test
Analyze	20
Evaluate	
Create	

LEARNING MATERIALS

Recommended Reading:

a) Skinner & Ivancevich, "Business for the 21st century", Latest Edition

b) The Ethical Business: Challenges and Controversies by Kamel Mellahi and Geoffrey Wood, Latest Edition, J.W. Arrowsmith Ltd. Bristol.

Supplementary Readings:

a) Strub/Attner, "Introduction to Business". (Latest Edition)

b) Corporate Governance and Globalization by Cohen, Latest edition, Edward Elgar

Course Code: MIS 1102
Course Title: Financial Accounting
Credit Hours: 03

CIE Marks: 40

SEE Marks: 60

RATIONALE

This course aims to equip students with a foundational understanding of accounting principles and concepts, emphasizing their practical relevance and real-world applications. It also prepares students to effectively apply these principles in generating financial and related reports to fulfill both internal management needs and external reporting requirements.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Accounting in Action:** Define accounting; Identify users and uses of accounting; Analyze the effect of business transactions on the basic accounting equation; Analyze different assumptions of accounting; Prepare financial statements from tabular summary of transactions.	8	1, 2 and 3
2	**Conceptual Framework for Financial Accounting:** Objectives, Assumptions, Principles and Constraints.	2	1
3	**The Recording Process:** Describe how accounts, debits, and credits	6	1 and 2

SN	CONTENTS	HOURS	CLOs
	are used to record business transactions; Indicate how a journal is used in the recording process; Explain how a ledger and posting help in the recording process; Prepare a trial balance.		
4	**Adjusting the Accounts:** Explain the accrual basis and cash basis accounting and the reasons for adjusting entries; Identify the major types of adjusting entries; Prepare adjusting entries for prepayments; Prepare adjusting entries for accruals.	5	1 and 3
5	**Completing the Accounting Cycle:** Steps in the accounting cycle; Prepare a worksheet; Prepare income statement from worksheet; Prepare Owners' equity statement from worksheet; Prepare a classified balance sheet; Explain the process of closing the books.	10	1 and 2
6	**Accounting for Merchandising Operations:** Describe Merchandising operations and inventory systems; Record transactions under perpetual inventory system; Record transactions under periodic inventory system; Compare a multiple-step income statement with a single- step income statement.	5	1 and 2
7	**Industry Engagement:** Students will be sent to different business organizations to identify how they maintain their books of accounts as well as record daily transactions, and understand the difference between theoretical knowledge and real-life accounting practices.	12	2 and 3

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Understand** the concepts of basic accounting and its framework; the recording process; adjustments for deferrals and accruals; the accounting cycle; and accounting for merchandising operations.
CLO 2	**Apply** the knowledge in preparing journal, ledger, and trial balance; the worksheet; the financial statements; and closing entries for service and merchandising business organizations.
CLO 3	**Analyze** the effects of business transactions on the accounting equation; the transactions in preparing adjusting entries; accounting knowledge in making business decisions.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	3			
CLO 2		2		
CLO 3			2	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, and Discussion	Question & Answer (Theory)
CLO 2	Lecture, Discussion, Problem based Exercise, Industry engagement	Problem solving, Report/Assignment submission and presentation
CLO 3	Lecture, Discussion, Problem based Exercise, Industry engagement	Question & Answer (Theory), Problem solving, Report/Assignment submission and presentation

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation /Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05		02	
Understand		02	03	05
Apply			05	05
Analyze		03	05	05

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	10
Understand	10
Apply	30

Analyze	10

LEARNING MATERIALS

Recommended Reading: Weygandt, J. J., Kimmel, P. D., & Mitchell, J.E. (n.d.). *Accounting Principles*, Latest edition. John Wiley & Sons. (**Text book**)

Kieso, D.E., Weygandt, J. J., & Warfield, T.D. (n.d.). *Intermediate Accounting*. Latest edition. John Wiley & Sons. (**Supplementary book**)

Course Code: MIS 1103
Course Title: Principles of Management
Credit Hours: 03

CIE Marks: 40

SEE Marks: 60

RATIONALE

The business world is changing rapidly side by side with global phenomena. Thus, the management practices have also been changing overtime to cope up with the changing phenomena. The course of Fundamentals of Management is planned to discuss up-to-date management theories, concepts, techniques, and practices in the context of a complex, dynamic, changing and globalizing business world. Applying the functional or process approach to the study of management, the discussion of this course will cover all main management functions including planning, organizing, leading, and controlling. This course will prepare students with a framework for understanding and analyzing the nature of managerial works and the determining factors of managerial success.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Managing and the Manager's Job:** An introduction to Management (Covered Definitions and Nature of Management), The Management Process, Kinds of Managers, Managing in Different Areas of the Organization, Basic Managerial Roles, Basic Managerial Skills, The Science and Art of Management.	6	1, 2 & 3
2	**Traditional and Contemporary Issues and Challenges of Management**: Basics of planning, organizing, leading and controlling, The Classical Management Perspective – Principles of Scientific Management and Principles of Administrative Management, The	3	1, 2 & 3

SN	CONTENTS	HOURS	CLOs
	Behavioral Management Perspective- The Human Relation Movement (Covered Theory X and Theory Y)		
3	**The Environment, Culture of Organizations:** Organization's Environments- The Elements of External and Internal Environment, The Organization's Culture- Managing Organization Culture, Organization-Environment Relationship- How Environments Affect Organizations,	3	1, 2 & 3
4	**The Ethics and Social Environment:** Individual Ethics in Organizations (Covered Basics of Ethics), Managing Ethics, Managing Ethical Behavior, Areas of Social Responsibility, Arguments For and Against Social Responsibility.	3	1, 2 & 3
5	**The Global Environment:** The Meaning of International Business, Managing the Process of Globalization, The Role of the GATT and the WTO.	3	1, 2 & 3
6	**Basic Elements of Planning and Decision Making:** Planning and Decision Making: Nature of Planning, The Planning Process, Kinds of Goals and Kinds of Organizational Plans, Time Frames for Planning, Types of Operational Plans, Planning- Steps in Planning-Tools and Techniques for Planning.	6	1, 2 & 3
7	**Managing Strategy and Strategic Planning:** The Nature of Strategic Management- The components of Strategy, Types of Strategic Alternatives, Strategy Formulation and Implementation, Using SWOT Analysis to Formulate Strategy.	3	1, 2 & 3
8	**Managing Decision Making and Problem Solving:** The Nature of Decision making- Decision Making Defines, Types of Decisions, Decision-Making Conditions, Rational Perspective on Decision Making- Steps in Rational Decision Making, Behavioral Aspects of Decision Making- Administrative Model and Their Elements, Forms of Group and Team Decision Making.	3	1,2 &3
9	**Basic Elements of Organizing:** The Elements of Organizing- Departmentalization, Establishing Reporting Relationships, Distributing Authority.	3	1, 2 & 3
10	**Managing Employee Motivation and Performance:** The Nature of Motivation, The Needs Hierarchy Approach (Covered Maslow's Hierarchy of needs and The ERG Theory), The Two Factor Theory, Individual Human Needs, Equity Theory, Alternatives Forms of Work Arrangements.	3	1,2 &3

SN	CONTENTS	HOURS	CLOs
11	**Leadership and Influences Process:** The Nature of Leadership, Leadership and Management, Leadership and Power, Leadership Traits, Leadership Behaviors, Leadership Style based on Authority.	3	1, 2 & 3
12	**Basic Elements of Control:** The Nature of Control, Purpose of Control, Types of Control, Steps in the Control Process.	3	1, 2 & 3

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Identify and understand** the basics of management concepts and its functions.
CLO 2	**Apply and analyze** the knowledge of management concepts and its functions.
CLO 3	**Evaluate** the knowledge of management concepts and its functions.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

CLO/PLO	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	2			
CLO 2		3		
CLO 3			3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO 2	Lecture, Discussion, Problem based Exercise	Assignment, Quiz, Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise	Presentation, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Class Test/Assignment/ Presentation (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05			
Understand			05	05
Apply		05	05	05
Analyze			05	05

Bloom's Criteria	Attendance (05)	Class Test/Assignment/ Presentation (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Evaluate				

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	10
Understand	10
Apply	20
Analyze	20
Evaluate	

LEARNING MATERIALS

Text Book:

Management by R.W. Griffin, A.I.T.B.S. publishers and distributor, New Delhi, (Latest Ed.)

Reference Books and Materials:

a) Management by Harold Koontz and Heinz Weihrich, McGraw-Hill Book Company, New York (USA), (Latest edition.)
b) Management by Stephen P. Robbins and Mary Coulter, Prentice Hall Inc. (Latest edition.)

Course Code: MIS 1104
Course Title: **Computer applications in Business**
Credit Hours: 02
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE

Today information and communication technology (ICT) can be regarded as a fundamental need for running the business smoothly. That's why businesses invest in COMPUTER widely and apply it for increased productivity and employee morale. A Computer is required for producing valuable information overtime that is needed in virtually every field of human thought and action. COMPUTER is useful for not only in the business world but also at an individual level. At a personal level, if one possesses high quality information, he/she can take advantage of his/her future career opportunities and can be better equipped to make other personal decisions. That's why the smartest person is one who acquires more knowledge than others. As we are moving through fourth industrial revolution, people in all walks of

lives need to know about computers. If businesses want to function effectively in an information rich-society, it is necessary to use ICT.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1	**Introduction to COMPUTER and Historical Evolution of Computing:** definition of COMPUTER and computer, components of ICT, applications of ICT, drawbacks of ICT, characteristics of a computer, computer for individual users, computer for organizations, and computer for society, the parts of computer System, information processing cycle, essential computer hardware, importance of software, data vs. info. and computer users	4	CLO 1
2	**Operating System Basics:** types of OS, user interface, running programs, managing hardware, enhancing an OS with utility software	4	CLO 2
3	**Transforming Data into Information:** how computer represent and process data, factor affecting processing speed, number systems, conversion of number system, binary arithmetic, complements, computer codes, axioms, theorems, operation, logic gates, Boolean functions, Boolean function and truth table	4	CLO 2
4	**Storage Devices:** categorizing storage devices, magnetic storage devices, optical storage devices, solid- state storage devices	4	CLO 3
5	**Basics of Networking:** the uses of network, types of networks, hybrid networks, how network are structured, network topologies and protocols, www, transmission medium	4	CLO 2
6	**Doing Business in the Online World:** types of business model, e-commerce definition, types of e-commerce, e-commerce payment methods, e-commerce customer service, online banking, intranet and extranet, telecommuters, recognizing secure sites	2	CLO 3
7	**Basics of Database Management System:** database and DBMS definition, applications of DBMS, entity , at- tribute and key field	3	CLO 2
8	**Computer Threats and Basic Security Measures:** basic security concepts, threats to users, threats to hardware, and threats to data	3	CLO 3

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	Ability to remember the key terms and concepts related to Information & Communication Technology (ICT).

CLO2	Understand the core concept, purpose and functions of different components of COMPUTER like - computer hardware, software, networking, telecommunication, database and their application in online business operations.
CLO3	Apply knowledge of conversion of number systems & perform arithmetic operations, computer threat and security to design, develop and implement effective security measures.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO 1	PLO 2	PLO 3	PLO 4
CLO1			3	
CLO2			3	
CLO3		2		

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion	Quiz, Question & Answer
CLO2	Lecture, Discussion, Problem Based Exercise	Question & Answer
CLO3	Lecture, Discussion	Quiz, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	5		5	5
Understand		5	5	5
Apply			5	5

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	20
Understand	20
Apply	20

LEARNING MATERIALS

Recommended Reading:

P. Norton, Introduction to Computers. New York: McGraw-Hill, Latest Edition.

Supplementary Readings:

- Computer fundamentals by P.K. Sinha (Latest Edition).
- Computers and Information Systems by Sarah E. Hutchinson and Stacey C. Sawyer, 8th Edition (or Latest Edition).
- Introduction to Information System by James A. O'Brien, 8th Edition (or Latest Edition), Irwin McGraw-Hill

Course Code: MIS 1105
Course Title: **Computer Applications in Business Lab**
Credit Hours: 02
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE: Computer applications in business (Lab) is a crucial course that equips students with practical skills in utilizing Information and Communication Technology tools to enhance business efficiency and decision-making. This program empowers students to navigate the digital landscape, streamline operations, and maintain competitiveness in a technology-driven world, preparing them for success across diverse business sectors.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1.	**Introduction to different peripheral devices:** • Basic operation using PC • hardware and peripheral introduction • Demo of computer mother board	2	1
2.	**Introduction to Microsoft Word** • Getting familiar with the Word interface • Creating a new document and entering text • Formatting text: Font, size, style, and color	2	2
3.	**Text Formatting and Alignment** • Aligning text: Left, center, right, and justified • Formatting paragraphs and line spacing • Using bullet points and numbered lists	2	2
4.	**Editing and Proofreading Tools** • Learn basic editing techniques such as copy, cut, paste, and undo. • Utilize spell-checking and grammar-checking functions.	3	2

	• Practice using the find and replace feature.		
5.	**Working with Images and Shapes** • Inserting images into the document • Resizing and positioning images • Adding shapes and customizing them	3	2
6.	**Organizing Information with Table:** • Creating tables and entering data • Formatting tables: borders, shading, and alignment • Merging and splitting cells	3	2
7.	**Page Setup and Printing Options** • Setting page margins, orientation, and size • Adding headers and footers • Printing documents with various options	3	2
8.	**Introduction to Microsoft PowerPoint** • Navigating the PowerPoint interface • Creating a new presentation with a theme • Adding and formatting slides with text and images	3	2
9.	**Enhancing Presentations with Shapes and Media** • Inserting shapes and text boxes into slides • Adding images and multimedia (audio and video) • Arranging and aligning objects on slides	3	2
10.	**Slide Transitions and Animations** • Adding slide transitions for visual effects • Applying animations to objects and text • Setting animation timings and effects	3	2
11.	**Introduction to Microsoft Excel** • Getting familiar with the Excel interface • Creating and saving workbooks • Data entry and cell formatting	3	2
12.	**Basic Formulas and Function** • Simple calculations using arithmetic operators • Understanding cell references (relative and absolute) • Introducing basic functions (SUM, AVERAGE, COUNT)	3	2
13.	**Managing Multiple Worksheets** • Adding, deleting, and renaming worksheets • Linking data between worksheets • Using 3D references for calculations	3	2
14.	**Sorting and Filtering Data** • Sorting data in ascending and descending order • Filtering data based on criteria • Using AutoFilter and custom filters	3	2
15.	**Introduction to Charts and Graphs** • Creating basic charts (bar, column, pie) • Formatting charts: labels, titles, and styles • Modifying chart data and design	3	2

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	To Understand and work with fundamental hardware peripherals
CLO2	To Apply proficiency in Microsoft Office applications

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO1	PLO2	PLO3	PLO4
CLO1	2			
CLO2		3		

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion, Lab Practice	Lab Performance, Lab Report/Project
CLO2	Lecture, Discussion, Lab Practice	Lab Performance , Lab Report/Projec

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	Lab Report 1 (15)	Lab Report 2 (15)
Remember	5			
Understand		5	5	5
Apply			10	10

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	
Understand	30
Apply	30

LEARNING MATERIALS

Recommended Reading:

P. Norton, Introduction to Computers. New York: McGraw-Hill, Latest Edition.

Supplementary Readings:

- Computer fundamentals by P.K. Sinha (Latest Edition).
- Computers and Information Systems by Sarah E. Hutchinson and Stacey C. Sawyer, 8th Edition (or Latest Edition).
- Introduction to Information System by James A. O'Brien, 8th Edition (or Latest Edition), Irwin McGraw-Hill

Course Code: MIS 1106
Course Title: Bangladesh Studies
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60
Total Marks: 100

RATIONALE:

The "Bangladesh Studies" course is designed to deepen students' understanding of the nation's history, culture, politics, economy, and geography. It fosters national identity, civic responsibility, and an appreciation of Bangladesh's rich heritage and struggles for independence. By exploring key historical events, social structures, and current challenges, the course equips students with the knowledge and critical thinking skills necessary to contribute meaningfully to national development. It also encourages informed citizenship and a deeper connection to the country's values and future goals.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
01	**Bangladesh at a glance:** Geographical Features; Demographical Features; Nature and Traits of the Government and Politics; State of Sovereignty	4	CLO 2
02	**Ancient History of Bengal:** Maurya Empire; Gupta Empire; Pala Dynasty; Sena dynasty; Economy and Culture of Ancient Bengal	4	CLO 1
03	**Mediaeval History of Bengal:** Muslim Rule in Bengal; Independent Sultans and their contributions; Contributions of Mughals; Battle of Palassey; 12 Bhuiyans of Bengal	4	CLO 1
04	**British Colonial Rule and Creation of Pakistan:** British Rule in India and their contributions; Resistance and Renaissance; Partition of Bengal; Creations of Pakistan	8	CLO 1
05	**Bengali Identity and Bangla Language Movement:** Phases of Language movement; Significance of Language movement and Bengali Nationalism	4	CLO 2
06	**Pakistan Regime: Structure of the state and Disparities:** Structure of Pakistan State; Economic, socio-cultural and Political Disparities between two wings; 1954 United front election and 21-points demand; 1956 constitution and martial law; Education Movement in 1962	4	CLO 3
07	**Six points Movement and Mass Uprising in 1969:** Six points program and	4	CLO 3

SN	CONTENTS	HOURS	CLOs
	its impact; Agartala Conspiracy Case; Mass uprising and fall of Ayub Khan; 11 points program of students		
08	**Liberation war of Bangladesh:** Genesis of Mukti Bahini and Sectors; Guerilla warfare; Role of world powers – India, Russia, USA, China, UN	5	CLO 4
09	**July-August movement:** Quota system debate, Supreme Court ruling, Student protests, PM's controversial remarks, Escalating blockades, Government violence, Student death, Private university joining, Internet shutdown, Demand for PM's resignation, Non-cooperation, PM's resignation, Government fall, Yunus-led interim government, Casualties, Youth activism impact, Long-term political changes, Social movement theories, Social media role, Media narratives.	5	CLO 2

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Understand** the key events of ancient, medieval, and colonial history that are related to present Bangladesh with the notion of chronological development and dynamics.
CLO 2	**Apply** a sense of commitment by knowing the Bengal identity and events towards the creation of Bengal nationalism by interconnecting diverse aspects of present Bangladesh.
CLO 3	**Analyze** the facts and events with rationality that contributed to the creation of Bangladesh as a nation-state.
CLO 4	**Evaluate** the final struggle and sacrifice towards an independent Bangladesh to foster patriotism for the nation's advancement.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) – (strong) correlation]

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	2			
CLO 2			2	
CLO 3				1
CLO 4			2	

Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy

CLO 1	Lecture, Discussion, Problem based Exercise	Question & Answer (theory)
CLO 2	Lecture, Discussion, Problem based Exercise	Question & Answer (theory)
CLO 3	Lecture, Discussion, Problem based Exercise	Question & Answer (theory)

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Assignment/Presentation/Class test (05)**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	5			
Understand		5	5	5
Apply				5
Analyze			5	5
Evaluate			5	

SEE- Semester End Examination (60 Marks)

Bloom's Category	**Test**
Remember	
Understand	10
Apply	20
Analyze	20
Evaluate	10

LEARNING MATERIALS

Textbooks:

1. Willem van Schendel, A History of Bangladesh, Cambridge University Press
2. Muntasir Mamun and Md. Mahbubur rahman, Sadhin Bangladesher Ovhudoyer Itihas

Course Code: MIS 1201

Course Title: Business Mathematics

Credit Hours: 03

CIE Marks: 40

SEE Marks: 60

RATIONALE

The "Business Mathematics" course equips students with essential quantitative skills needed for effective decision-making in business. It covers topics such as interest calculations, financial analysis, statistics, and algebraic techniques that are vital in real-world business scenarios. This course enhances analytical thinking, problem-solving abilities, and data interpretation skills, preparing students to handle financial reports, budgeting, forecasting, and other business functions. By linking mathematical concepts with practical applications, the course supports informed and strategic decision-making, making it a foundational component for business studies.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Exponential and logarithmic functions:** Exponential functions, properties of exponents, Logarithms- Rules, Log & Ln, Importance of logarithms in Business. Solution of exponential functions by using logarithms.	6	CLO 2 & 3
2	**Cartesian Coordinate System:** Rectangular Co-ordinates, Abscissa and Ordinate, Distance between two points. Area of triangle, collinearity. Area of quadrilateral, pentagon whose vertices are given.	6	CLO 1 & 2
3	**Mathematics of Finance:** Simple interest, Bank Discount, Effective interest rate, Compound interest. Conversion Period, Finding the time and interest rate. Classification of Annuity, Ordinary Annuities: Futures Value, Sinking Fund, Present value, Amortization payment and Amortization Schedule.	7	CLO 1 & 2
4	**Matrices and Vectors:** Definition of Matrix, Scalar and Vector, Addition and subtraction of Matrices, Matrix Operations, Matrices and vectors: The Identity Matrix, Inverse of a Matrix. Solution of Systems of Linear Equations along with business problems by using matrix algebra.	8	CLO 1, 2, 3
5	**Linear Equation and Break-Even Analysis:** Linear Equation, Cost function, revenue function, Profit function, Break Even Analysis, Break Even quantity, Break Even Interpretation, Break Even Chart, Break Even sales volume, Mark-up & Margin.	6	CLO 2 & 3
6	**Systems of linear equations:** Definition of variables, Definition of equations, types of Equation, Solving the systems by Elimination & Graphical Method.	3	CLO 1 & 2

SN	CONTENTS	HOURS	CLOs
7	**Linear Programming Model:** Define decision variables, Parts of Linear Programming mode, Profit Maximization and Cost Minimization. Model with Solutions by graphical method.	6	CLO 2 & 3

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Remember** the different types of interest, different types of annuity, variables, equations, linear equations, cost, revenue, profit, break-even, different types of matrix, decision variables, objective function, constraints, non-negativity, linear programming problem (LPP). **Again, understand** the basic rules of the exponential function, the basic rules of the logarithmic function, the rules of coordination, the formula to find out simple/compound interest, the formula to find out amortization/sinking fund, the Gauss-Jordan formula, the Matrix inverse rule, Break-even analysis, LPP model.
CLO 2	**Apply** the knowledge of the exponential function, the logarithmic function, the coordinate system, interest, annuity, matrix, break-even analysis, and LPP model to solve problems.
CLO 3	**Analyze** the knowledge of coordinate system, matrix, break-even analysis, LPP model to make an effective business decision.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1	3			
CLO 2			2	
CLO 3		3		

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO 2	Lecture, Discussion, Problem based Exercise	Assignment, Quiz, Question & Answer

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 3	Lecture, Discussion, Problem based Exercise	Presentation, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/ Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05	02		5
Understand				
Apply			10	5
Analyze		03	5	5

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	20
Understand	10
Apply	20
Analyze	10

LEARNING MATERIALS

Recommended Reading:

1. Mathematics with Applications in Management and Economics by **Gordon D. Prichett and John C. Saber** (7^{th} Edition)
2. Business Mathematics by **Sancheti and Kapoor**

Reference Books:

1. Business Mathematics by **Md. Rafiqul Islam**
2. Business Mathematics by **S. M. Shahidul Islam**

Course Code: MIS 1202
Course Title: Principles of Finance
Credit Hours: 03
CIE Marks: 40

SEE Marks: 60

RATIONALE

The "Principles of Finance" course provides a foundational understanding of financial concepts, tools, and strategies essential for decision-making in business and personal finance. It covers key topics such as time value of money, risk and return, financial statements, budgeting, and investment analysis. By equipping students with analytical skills and a solid grasp of financial principles, the course prepares them for real-world applications in managing resources, making informed financial decisions, and contributing to organizational success. It serves as a prerequisite for advanced finance courses and fosters a comprehensive understanding of financial markets and corporate finance.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Role of Managerial Finance:** Theories of basic finance, managerial finance, agency problem, wealth maximization, Financial Market etc.	03	1
2	**Sources of Finance**, methods of financing and investments	02	1
3	**Time Value of Money:** Pattern of cash flow, Present value, future value, Annuity, mixed stream	06	3
4	**Short-Term Financing**: Basics of short term financing, calculation of cost of short term finance, sources of short term finance	05	1
5	**Intermediate-Term Financing**: The details of Intermediate-Term Financing, calculation of the cost of Intermediate-Term Financing, the sources of Intermediate-Term Financing, prepare the payment methods	05	1
6	**Long-Term Financing**: Details of long-term financing, calculation of the cost of long-term financing, sources of long-term financing	04	3
7	**Capital Budgeting**: Concepts of Capital budgeting, applying tools of capital budgeting techniques and apply this tools for investment decision	04	1
8	**Risk and Return:** Concepts of risk and return, sources of risk, estimate risk and return of different projects	02	3
9	**Lease Financing**: Basics of lease financing, types and methods of lease financing, prepare lease payment schedule and **estimate** lease financing cost.	02	2
10	**Ratio Analysis:** Analyzing the financial performance of a company using different ratios	03	3
11	**Industry Engagement:** Ratio analysis by using Annual Reports and published data	6	3

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Understand** the basic concept of finance, managerial finance, agency problem, wealth maximization, financial market and sources of fund. Also **understand** the concept of short term, intermediate term, long term financing, lease financing, capital budgeting, and concept of Risk & Return.
CLO 2	**Apply** the knowledge in preparing loan repayment and lease payment schedules.
CLO 3	**Evaluate the** cost of short term, intermediate term, long term and lease financing. **Evaluate** investment projects in order to make investment decisions on the basis of capital budgeting techniques, the time value of money, concept of risk & return as well as **evaluate** the financial performance of a company using different ratios.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1			3	
CLO 2		3		
CLO 3	2			

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	**Teaching-Learning Strategy**	**Assessment Strategy**
CLO 1	Lecture, Discussion, Student interaction by using different tools, Group discussion.	Question & Answer (theory)
CLO 2	Lecture, Discussion, Problem based Exercise,	Question & Answer (theory), Problem solving
CLO 3	Lecture, Problem based Exercise, industry engagement.	Question & Answer (theory), Problem solving, Report submission

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/ Presentation/ Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05			
Understand			5	5
Apply			5	5
Analyze				
Evaluate		05	5	5

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	
Understand	15
Apply	15
Analyze	
Evaluate	30

LEARNING RESOURCES

Recommended Reading:

Gitman, Lawrence J., and Chad J. Zutter. **Principles of Managerial Finance**. Prentice Hall, 2012 **(Latest Edition).**

Supplementary Readings:

- **Ross, S. A.,** Westerfield, R., & Jordan, B. D. **Fundamentals of Corporate Finance**. Tata McGraw-Hill Education.
- **Van Horne**, James C., and John Martin Wachowicz. **Fundamentals of Financial Management.** Pearson Education, 2008 **(13th Edition).**

Course Code: MIS 1203
Course Title: Business Communication
Credit Hours: 03

CIE Marks: 40
SEE Marks: 60
Total Marks: 100

RATIONALE

The "Business Communication" course equips students with essential skills to communicate effectively in professional settings. It focuses on written, verbal, non-verbal, and digital communication strategies tailored to business contexts. Students learn to craft clear messages, conduct presentations, write reports, and engage in professional correspondence. The course also emphasizes intercultural communication, active listening, and persuasive techniques, preparing students to navigate diverse workplace environments. By enhancing clarity, confidence, and professionalism, this course supports career readiness and organizational success in an increasingly globalized and competitive business world.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Understanding Workplace Communication:** The Role of Communication in Business, Communication in Brief, The Process of Human Communication, Barriers to Communication	6	CLO 1
2	**Adapting your words to your readers:** Construction of Clear Sentences and Paragraphs, Choosing Words that Communicate, The Basic Need for Adaptation, Suggestions for Selecting words	8	CLO 1
3	**Writing for a Positive Effect:** Conversational Style, You- Viewpoint, Positive Language, Courtesy, The Role of Emphasis, Coherence	6	CLO 1
4	**Choosing the best process and form, Getting to the point in good news and neutral messages, Maintaining Goodwill in Bad News Messages:** Traditional Letters, Memorandums, and E-mails, The process of Writing, Adaptation to Inquiries about People, Adaptation to General Favorable Responses	8	CLO 2
5	**Conducting a winning job campaign:** Job Search, Career Planning and Development, Writing Cover Letter and Curriculum Vitae, Keys to Getting Good Jobs	8	CLO 3
6	**Oral forms of business communication**	6	CLO 3

Course Learning Outcome (CLO): By the end of the course, student will be able to**:**

CLO 1	**Understand** the use of basic and advanced proper writing techniques that today's technology demands
CLO 2	**Analyze** evaluate different techniques of writing effective and concise letters, memos,

	Emails, Resume, cover letter writing techniques
CLO 3	**Apply** career skills that are needed to succeed, such as using ethical tools, working collaboratively, observing business etiquette, and resolving workplace conflicts, meeting-professional talking etiquette, Effective writing techniques , Job search process related issues etc.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1	3			
CLO 2		3		
CLO 3			3	

Teaching-Learning and Assessment Strategy

CLOs	**Teaching-Learning Strategy**	**Assessment Strategy**
CLO 1	Lecture, Discussion, Problem based Exercise	Question & Answer (theory)
CLO 2	Lecture, Discussion, Problem based Exercise	Question & Answer (theory)
CLO 3	Lecture, Discussion, Problem based Exercise	Question & Answer (theory)

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Assignment/Presentation/ Class test (05)**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	5			
Understand		5	5	5
Apply			5	5
Analyze			5	5
Evaluate				

Bloom's Criteria	Attendance (05)	Assignment/Presentation/ Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Create				

SEE- Semester End Examination (60 Marks)

Bloom's Category	Test
Remember	
Understand	20
Apply	20
Analyze	20

LEARNING MATERIALS

Text Book: Business Communication:

Connecting in a Digital World, by Lesikar, Flatley, Rentz&Pande. (latest edition)

Reference book:

Business Communication. Author: Bedi, R/ Aruna, K.

Course Code: MIS 1204
Course Title: Management Information Systems
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

This course is designed to help students understand and effectively use key information technology tools and applications essential for succeeding in today's dynamic business landscape. Through hands-on practice and real-world scenarios, students will gain practical experience in working with essential software tools commonly used in business operations.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1.	**MIS evolution and Basic MIS Terms:** Define MIS; Know the evolutionary terminologies of MIS; Define MIS terminologies; Describe system stakeholders; Contemporary breakthrough technologies.	6	1
2.	**Global E-business and Collaboration:** Able to understand business processes; The types of information systems and their distinctions; Understand enterprise application systems; Define E-business, E-commerce, E-government.	4	2

SN	CONTENTS	HOURS	CLOs
3.	**Information Systems in Global Business Today:** Discuss contemporary approaches to information systems; Define digital firm; Discuss the features of digital firm; Understand the information value chain model.	4	2
4.	**Emerging Technologies related with MIS:** Discuss 4th Industrial Revolution, Understand the objectives of 4IR, Define Machine Learning, Artificial Intelligence, Cloud Computing, Cognitive Computing, Blockchain, etc.	4	1
5.	**Information Systems and Organizations:** Define organization; Understand the economic impact of IS on organization; Define value web, synergies, and disruptive technologies.	4	2
6.	**E-Commerce, Digital Markets and Digital Goods:** Define business model, E-commerce; Discuss different types of E-commerce; Discuss e-commerce business and revenue model.	4	3
7.	**Database and Information Management:** Define database, and DBMS; Discuss data hierarchy; Discuss the file organization methods; Discuss the relational database and E-R model.	4	3
8.	**Lab practice:** Exploring Microsoft office suite	12	3

Course Learning Outcome (CLO): By the end of the course, students will be able to:

CLO 1	**Understand** fundamental concepts and terminology related to information technology, information systems, emerging technologies, and their applications across various business functions.
CLO 2	**Analyze** and evaluate key components of e-commerce, business and revenue models, databases, system development processes, and information system security issues.
CLO 3	**Apply** practical skills in using MIS tools and technologies through lab-based tasks, preparing for roles as future MIS professionals.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	3			
CLO 2		2		
CLO 3			2	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO 2	Lecture, Discussion, Problem based Exercise	Quiz, Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise	Presentation, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05		02	
Understand		02	03	05
Apply			05	05
Analyze		03	05	05

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	10
Understand	10
Apply	30
Analyze	10

LEARNING MATERIALS

Recommended Reading:

Kenneth C. Laudon & Jane P. Laudon, "Management Information Systems", Latest Edition, Pearson Publications.

Supplementary Readings:

- James O' Brian, "Management Information Systems", Latest Edition, Prentice Hall.
- Uma G. Gupta, "Management Information Systems: A Managerial perspective", Latest Edition, West Group.

Course Code: MIS 1205
Course Title: General Science and Environment
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

This course is designed to bridge General Science and Environment concepts and modules that helps students acquire a basic understanding of earth systems, drawing on both the natural and social sciences to make right business decisions related to sustainability, climate change, natural hazards, natural resources, waste management, energy issues and green taxation. This course will also cover recommendations and possible solutions to contemporary resource and environmental problems in Bangladesh.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Force of Gravity, weight and friction:** Force-gravitational force-centripetal force-weight of standard masses-why weight varies-relation between total gravitational force and weight-action and reaction forces-weightlessness-artificial weight in a space station-friction-static friction-sliding friction-coefficient of friction-nature of friction-brakes ¬lubrication-air lubrication-further developments	08	1
2	**Speed, velocity and acceleration:** Average speed-actual speed-scalar and vector quantities-distance and displacement-velocity-acceleration-equations of uniformly accelerated motion¬ velocity-time graphs-uniformly accelerated motion represented graphically ¬velocity from distance-time graph-acceleration from velocity-time graph¬ Galileo Galilei-simple pendulum and measurement of g-distance moved by a freely falling body related to time of fall-to measure g by the use of a centi-second timer.	06	2

SN	CONTENTS	HOURS	CLOs
3	**Newton's laws of motion:** Newton's first law of motion-momentum-Newton's second law of motion-to verify experimentally that F oc ma-weight of a body expressed in newtons-to calibrate a spring balance to measure mass as well as weight-weight of a body in a lift Newton's third law of motion-conservation of momentum-rocket propulsion jet engine.	06	3
4	**Work, energy and power:** Work-energy-mechanical energy-interchange of energy between p.e. and k.e. - internal energy-transfer of energy from one kind to another-heat energy-sun as a source of energy-nuclear energy-future of nuclear power installations ¬conservation of energy and mass-thermonuclear energy-power and its unit-to measure personal power-kinetic energy calculation.	07	2 and 3
5	**Some molecular properties of matter:** Atoms and molecules-Brownian movements, kinetic theory of matter-nature of the force between atoms and molecules-three states or phases of matter-to measure the approximate length of a molecule-diffusion-surface tension-molecular explanation of surface tension-adhesion and cohesion-capillary attraction¬ osmosis-strength of materials-elasticity-Hooke's law-industrial applications of metallurgical studies-fluid friction-demonstration of terminal velocity. **Atoms-the big idea:** Atoms, elements, and compounds-more about atoms-Isotopes and At-How electrons are arranged-how ideas of the atoms are developed-The atom: the inside story.	08	1 and 3
6	**Bonding:** Why compounds form-the ionic bond-Some other ions-Ionic compounds and their properties-the covalent bond-Covalent substances-Metals: more giant structures. **Reactions, equations, and amounts:** The masses of atoms-percentage composition of a compound-the formula of a compound-equations for chemical reactions-calculations from equations calculating the volumes of gases-calculations on electrolysis. **Energy Changes and reversible reactions:** Exothermic and endothermic reactions-explaining energy changes-reversible reactions-shifting the equilibrium-making ammonia in industry-fertilizers-the pros and cons of fertilizers.	08	2 and 3
7	**Environment:** Carbon and nitrogen cycles, Good drinking water-clean water, cleaning sewage, drinking water, Water and fertilizers-eutrophication, nitrates in drinking water, Burning fuels and the air-burning coal, burning petrol and diesel oil, Ozone/greenhouse effect-the	06	2 and 3

SN	CONTENTS	HOURS	CLOs
	ozone hole, the greenhouse effect, More rubbish¬ archaeology's treasure trove, getting rid of the rubbish, landfill sites, Cars of tomorrow-car bodies, emissions, safety features, Home of the future-the shell - walls, the roof, inside the house.		

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Understand** the basic principles of astronomy, biology, chemistry, geology, meteorology and physics
CLO 2	**Apply** their scientific knowledge to both the natural and technological worlds around them.
CLO 3	**Analyze** generic concepts and methods into critical reviews of contemporary, real-world environmental management practices.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1				
CLO 2	2	2		
CLO 3			3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	**Teaching-Learning Strategy**	**Assessment Strategy**
CLO 1	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO 2	Lecture, Discussion, Problem based Exercise	Assignment, Quiz, Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise	Presentation, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Class Test/ Assignment/ Presentation**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	05			
Understand			05	05
Apply		05	05	05
Analyze			05	05

SEE – Semester End Examination [60 marks]

Bloom Criteria	**Score for the Test**
Remember	10
Understand	10
Apply	20
Analyze	20

LEARNING MATERIALS

Recommended Reading:

Chiras, D. D. (Ed.). (n.d.). Creating a Sustainable Future by Daniel D. Chiras

Supplementary Readings:

Bakshi, D. N. G., Sen & Banerjee (2000). Environmental Science. Latest Edition, Calcutta Book House Pvt. Ltd.

Course Code: MIS 1206
Course Title: Viva-Voce
Credit: 02
CIE Marks: 0
SEE Marks: 100

Course Code: MIS 2101
Course Title: Managerial Economics
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

Managerial Economics is an entry-level undergraduate course designed to introduce students to the core principles of economic thinking. At BRUR, it serves as the first exposure to economics for BBA students and forms the initial part of a two-course sequence in the discipline. The course lays a strong analytical foundation that supports students throughout their academic journey and into their professional lives, particularly in business and related fields. It begins by exploring the fundamentals of supply and demand and how market equilibrium is established. The course then delves into consumer behavior and decision-making processes, followed by an examination of firm behavior, optimal production choices, and the influence of various market structures on business strategies.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Introduction:** Definition, nature, and scope of managerial economics, Role of managerial economics in decision-making, Relationship with microeconomics, macroeconomics, and business strategy, Basic economic problems and their solutions	3	1
2	**Demand, Supply & Equilibrium:** Law of demand, determinants of demand, substitution effect, income effect, movement along the curve, shifts of curve, Law of Supply, determinants of supply, substitution effect, income effect, movement along the curve, shifts of curve, Market equilibrium, impacts of overall changes in demand and supply on price and quantity, shifts of curve with multiple, market distortions, calculation of equilibrium of price and quantity, consumer surplus	9	1, 2 & 3
3	**Elasticity:** Price elasticity of demand, income elasticity, cross elasticity, revenue, elasticity of supply, types of elasticity	3	1 & 2
4	**Utility & Budget line:** Utility, Different types of utility, Math and graph, Indifference curve, Budget line, Impacts of changes in indifference curve and budget line on consumer equilibrium.	6	1, 2 & 3
5	**Theory of Production:** PPF, Opportunity cost, production function, short run, long run, Returns to scale, Different types of RTS, least cost, combination, linear, homogeneous production, function and calculation of producer surplus.	3	1 & 3

SN	CONTENTS	HOURS	CLOs
6	**Theory of Cost:** Total Cost, TVC, TFC, MC and AC, U shaped cost curve, long run cost curve, envelope curve, cost minimization and profit maximization problem of a firm mathematically.	6	1 & 3
7	**Market (Perfect Competition):** Behavior of a firm in a perfectly competitive market in the short run and long run and profit max condition.	3	1, 2 & 3
8	**Monopoly:** Analyze a firm's profit maximizing strategies under conditions of a monopoly	3	1, 2 & 3
9	**Oligopoly:** Analyze a firm's profit maximizing strategies under conditions of oligopoly	3	1, 2 & 3
10	**Monopolistic Competition:** Analyze a firm's profit maximizing strategies under conditions of monopolistic competition	3	1, 2 & 3

Course Learning Outcome (CLO): By the end of the course, students will be able to:

CLO 1	**Understand** the basic concepts of managerial economics; demand and supply; equilibrium; production, possibility, frontier (PPF); elasticity of demand & supply; utility; budget line; market.
CLO 2	**Apply** the knowledge of demand and supply; equilibrium and disequilibrium; production, possibility, frontier (PPF); utility; budget line; market.
CLO 3	**Analyze** the equilibrium; production, possibility, frontier (PPF); elasticity of demand and supply; cost and production; utility; budget line; market.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1	2			
CLO 2			2	
CLO 3		2		

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion	Question & Answer (Theory)
CLO 2	Lecture, Discussion, Problem based Exercise	Problem Solving
CLO 3	Lecture, Discussion, Problem based Exercise	Problem Solving

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05		02	02
Understand		02	03	03
Apply			05	05
Analyze		03	03	03
Evaluate			02	02

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	10
Understand	15
Apply	20
Analyze	15

LEARNING MATERIALS

Recommended Reading:

Managerial Economics: Applications, Strategy, and Tactics by James R. McGuigan, R. Charles Moyer, Frederick H. deB. Harris

Supplementary Readings:

- N Gregory Mankiw (Latest Edition), *Principles of Microeconomics.*
- Case. E. K, C. Ray, E. Oster (Latest Edition), *Principles of Microeconomics*

- Browning.E. K, Zupan. M. A, *Microeconomics- Theory and Applications.*

Course Code: MIS 2102
Course Title: **Data Structure and Algorithm**
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE

Every program or piece of software is built on two components: data and algorithms. Algorithms convert data into something that software can use. In order for algorithms to quickly maintain, use, and loop through data, it is crucial to understand how to structure data. This course is designed to teach students what data structures and algorithms are, why they are useful, how they can use them effectively in Java, and how to apply data structures and algorithms to solve complex problems.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1	**Introduction to Data Structures and Algorithms:** Concepts of data structures and algorithms, why they are useful, applications of data structure and algorithms, data structure terminologies, characteristics, and operations, types of data structures, abstract data type, how to use data structures, which data structures to use, approach to design an algorithm, algorithm complexity, algorithm design technique, how to use algorithms	6	CLO 1
2	**Introductory Knowledge of Java Programming:** data types, functions, modules, object-oriented programming	6	CLO 2
3	**Data Structure (Linear):** Characteristics and applications of Array, Linked List, Stack, and Query, practice lesson and implementation using Java programming	6	CLO 3
4	**Data Structure (Non-Linear):** characteristics and applications of Tree and Graph, practice lesson and implementation using Java programming	6	CLO 3
5	**Sorting, Searching and Algorithm Analysis:** Sorting algorithms (bubble, quick, insertion, selection, merge, and shell sort), Java's sorting algorithm, Searching algorithms (linear and binary), Algorithm complexity and Big O notation	6	CLO 4
6	**Algorithm Design Techniques:** Divide-and-conquer and greedy tactics, dynamic programming, graph and compression algorithms using Java	6	CLO 4
7	**Lab Performance Appraisal:** Lab performance appraisal based	6	CLO 4

	on Project Work		

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	Understand data structures and algorithms, their usefulness, their implementation in Java efficiently.
CLO2	Analyze implementation and operations of basic data structures: Array, Linked List, Stack, Queue, Tree and Graph.
CLO3	Apply the knowledge of basic sorting, searching, and algorithm analysis and design techniques.
CLO4	Evaluate the importance of data structures in the context of writing efficient programs.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO 1	PLO 2	PLO 3	PLO 4
CLO1		2		
CLO2			2	
CLO3			2	
CLO4				3

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion	Quiz, Question & Answer
CLO2	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO3	Lecture, Discussion, Problem based Exercise	Quiz, Question & Answer
CLO4	Lecture, Discussion, Problem based Exercise	Quiz, Presentation, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	5			
Understand		5	5	5
Apply			5	5
Analyze			5	5

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	
Understand	15
Apply	15
Analyze	15
Evaluate	15

LEARNING MATERIALS

Recommended Reading:

Data Structures and Algorithms in Java by Roberto Tamassia, Michael H. Goldwasser, Michael T. Goodrich, 6th Edition, Wiley publication

Supplementary Readings:

A practical Introduction to Data Structures and Algorithm Analysis by Clifford Shaffer; 2nd Edition (or Latest Edition), Prentice Hall.

Course Code: MIS 2103
Course Title: Business and ICT Laws
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

Business and ICT Laws is designed to give students an understanding of the key areas of commercial law and how they relate to each other. The course offers students an opportunity to examine certain areas of commercial law. It is suitable for those students who want an overview of commercial law as well as those who want to bring themselves up to date with recent developments in this field.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**The Essential Elements of Contracts:** The meaning of contract, Essential elements of Contract, The types of Contracts.	3	1, 2
2	**Offer & Acceptance:** Meaning of Offer, Meaning of Acceptance, The rules regarding Offer, Rules regarding Acceptance, Revocation of Offer and Acceptance.	3	1, 2
3	**Consideration:** Meaning of Consideration, Types of Consideration, Rules regarding Consideration, No consideration, no contract.	5	1, 2, 3
4	**Intentions to create legal relations:** The meaning of legal relations as per business law.	3	1, 2, 3
5	**Void & Voidable Agreement:** Meaning of Void agreement , Meaning of Voidable agreement, Meaning of Valid agreement, Difference between Void and Illegal agreement.	5	2, 3
6	**Capacities of Parties:** Meaning of Minor, Meaning of Unsound Mind, Rules regarding Minor, Rules regarding unsound mind.	6	2
7	**Free Consent:** Rules of Coercion, Rules of Undue Influence, Rules of Misrepresentation, Rules of Fraud.	5	2, 3
8	**Performance of Contracts and Contingent Contracts:** Meaning and rules of Contingent contract, Difference between contingent contract and wagering agreement, Rules regarding Tender, Rules regarding performance of contract.	3	2, 3
9	**Termination and Discharge of Contracts:** Rules regarding termination of contract, Types of termination.	3	1, 3
10	**The Law Relating to Sale of Goods:** Definition of sale, Rules regarding sale of goods.	3	2, 3
11	**Company Law:** Introduction, Law regarding Private limited company, Law regarding Private limited company.	2	2
12	**ICT Act of Bangladesh.**	1	1, 3

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	Understand the basic rules of contract, business and ICT Laws.
CLO 2	Apply different rules of contract, business and ICT Laws.
CLO 3	Analyze the rules of contract, business and ICT Laws.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	1			
CLO 2		2		
CLO 3			3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO 2	Lecture, Discussion, Problem based Exercise	Assignment, Quiz, Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise	Presentation, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Class Test/ Assignment/ Presentation	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05			
Understand			05	05
Apply		05	05	05
Analyze			05	05

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	10
Understand	10
Apply	20
Analyze	20

LEARNING MATERIALS:

Recommended Reading:

- Charlsworth, ***Mercantile Law,*** Stevens & Sons, London.
- A.K. Sen, ***Handbook of Commercial Law,*** A Mukherjee & Co. (PVT) Ltd. Calcutta.
- M.C. Shukla, ***A Manual of Mercantile Law,*** Chand & Company.
- Companies Act 1994
- ICT Act 2006

Supplementary Readings:

Asaduzzaman (2022), Business Law of Bangladesh (5th edition), National Law Book House.
Gazattes and ordinace by Government of Bangladesh.

Course Code: MIS 2104
Course Title: Principles of Marketing
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

This course aims to introduce students to the core principles of marketing and how marketers identify, understand, and fulfill customer and market needs. It offers comprehensive insight into key marketing concepts and their practical applications. Throughout the course, students will engage with real-life business scenarios and develop problem-solving skills by working on relevant marketing challenges.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Creating and Capturing Value:** What is marketing, Creating and capturing customer value, customer satisfaction, Market, Market Offerings, Marketing, Myopia, Marketing concepts, Customer relationship.	3	1, 2
2	**Company and Marketing Strategy:** Partnering to Build relationships	3	1, 2
3	**Analyzing the marketing environment:** Micro- environment and Macro Environment.	3	1, 2
4	**Consumer Markets and Consumer Buyer Behavior:** Model of Buyer Behavior, factors affecting buyers; decision making process, New-product.	3	1, 2
5	**Business Markets and Business Buyer Behavior:** Decision making process, Factors affecting decision Making process.	3	3
6	**Customer – Driven Marketing Strategy:** Creating value for the customers: Segmentation, Targeting, Positioning.	6	3

SN	CONTENTS	HOURS	CLOs
7	**Products, Services and Brads, New-product development strategy:** Levels of Products, Products and service classifications and decisions, Product line & mix, characteristics of service, Building strong Brands, New-product development and product life-cycle strategies.	6	3
8	**Pricing strategies and capturing value for customers:** What is price? Pricing strategies, factors affecting price, additional consideration, product-mix pricing strategies, Price adjustment strategies.	6	3
9	**Marketing channels:** How, channel members add value, Channel behavior, Channel Design.	3	2
10	**Integrated Marketing communication strategies:** Integrated Marketing Communications Strategy, Promotion Mix.	6	2

Course Learning Outcome (CLO): By the end of the course, students will be able to:

CLO 1	**Understand** fundamental marketing concepts, including company and marketing strategy, marketing environment, consumer and business markets, customer value-driven strategies, products and branding, pricing, promotion, and distribution.
CLO 2	**Apply** and analyze marketing theories and frameworks to evaluate market dynamics, customer behavior, product development, pricing strategies, and integrated marketing communications in both consumer and business contexts.
CLO 3	**Create** practical marketing solutions by integrating theoretical knowledge into real-life business scenarios, focusing on strategic decisions related to product development, pricing, promotion, and distribution.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1	3			
CLO 2		3		
CLO 3				2

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion	Quiz, Question & Answer
CLO 2	Lecture, Discussion	Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise	Assignment, Presentation, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/ Presentation/ Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05		02	
Understand		02	03	02
Apply			05	03
Analyze		03	05	05
Create				05

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	10
Understand	10
Apply	15
Analyze	15
Evaluate	05
Create	05

LEARNING MATERIALS

Recommended Reading:

Principles of Marketing- Philip Kotler & Gary Armstrong (Latest Edition).

Supplementary Readings:

Principles of Marketing (Practices & Applications in Bangladesh) Tamzid Ahmed Chowdhury. (Latest Edition)

Course Code: MIS 2105
Course Title: **Calculus**
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE

This introductory course emphasizes the application of differential and integral calculus to the problems encountered in business and management science. The course begins with a brief review of algebra to ensure that students have the necessary mathematical skills to succeed in the course. This review is followed by an introduction to limits and continuity; students then study differential and integral calculus for polynomial, exponential and logarithmic functions and their applications to curve sketching, maxima, and minima.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1	Basic Rules of Differentiation: Definition, Rules of Different functions, Application of Different rules.	6	1, 2
2	Marginal Function in Business: Sum-difference rule, power rule, rates of change, marginal cost, marginal revenue, and marginal profit.	6	1, 2
3	Optimization of Cost and Profit Function: Rules of second derivative, Rules of partial derivative, Maxima and Minima for one variable, Maxima and Minima for multiple variable, Business Application.	6	2 ,3
4	Depreciation: Exponential and Logarithmic Function, Uninhibited growth Model, Model of Limited Growth Function, Depreciation.	6	3, 4
5	Basic Rules of Integration: Definition, Rules of Different functions, Application of Different rules of integration. Evaluating Definite Integrals	6	2,3
6	Area between Two Curves: Definite Integral, The Fundamental Theorem of Calculus, Area calculation.	6	3, 4
7	Applications of the Definite Integral to Business: Exponential integration, Application of exponential integration, Consumer Surplus and producer Surplus	6	3, 4

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	**Remembering and Understand** the rules of differentiation in different functions, rules of integration in a different function, Optimization method using differentiation, uninhibited growth model, model of limited growth function, depreciation using differentiation, a method to find the

	area of space, consumers'/producers' surplus using integration.
CLO2	**Apply** the knowledge of rules of differentiation, rules of integration, Optimization method, uninhibited growth model, model of limited growth function, depreciation, a method to find the area of space, and consumers'/ producers' surplus using integration to solve problems.
CLO3	**Analyze** the knowledge of optimization method, uninhibited growth model, model of limited growth function, depreciation, a method to find the area of space, and consumers'/ producers' surplus using integration to make an effective business decision.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO 1	PLO 2	PLO 3	PLO 4
CLO1	3			
CLO2			3	
CLO3				3

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO2	Lecture, Discussion, Problem based Exercise	Assignment, Quiz, Question & Answer
CLO3	Lecture, Discussion, Problem based Exercise	Presentation, Quiz, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Class Test/Assignment/ Presentation (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05			
Understand			05	05
Apply		05	05	05

Bloom's Criteria	Attendance (05)	Class Test/Assignment/ Presentation (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Analyze			05	05

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	05
Understand	15
Apply	25
Analyze	15

LEARNING MATERIALS

Recommended Reading:

1) Recommended Reading:

Calculus For Business, Economics, and the Social and Life Sciences

Laurence D. Hoffmann Smith Barney

Gerald L. Bradley

Claremont McKenna College

2) Supplementary Readings:

1. Calculus in Business and Economics by **G. S. Monk**

Course Code: MIS 2201
Course Title: Entrepreneurship Development and Small Business Management
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

The aim and objective of this course design are to provide students with a clear understanding of the processes of new venture creation and the critical knowledge necessary to manage the business. As a part of this course, students will be asked to prepare a comprehensive business plan for starting a new business or acquiring any business.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Introduction:** Definition of entrepreneurship - Entrepreneurship and	3	1

SN	CONTENTS	HOURS	CLOs
	economic development - Entrepreneurship as a critical resource - Entrepreneurship in economic development. **Theories of Entrepreneurship:** Psychological theories - Socio-Psychological and Culture theories - Opportunity and background variables and entrepreneurship.		
2	**Entrepreneurship in the Less Developed Countries:** Overview - entrepreneurial system model - Influences on entrepreneur - Special dimension rural entrepreneurship. **Entrepreneurship and Small Business:** Definition of small business - Small business and economic development - Problem of small business development - Entrepreneurship training as an aid to small business - Different schemes of training - Problems in small business.	3	1 & 2
3	**Factors Affecting Entrepreneurial Growth:** To teach young entrepreneurs how to face challenges regarding Raw Materials, Market, Infrastructure, Education, Attitude of Society, and Cultural Value Capital- Economic factors are one of the most important factors to be established as an entrepreneur. Labor-To get labor easy and available but for the right worker for the right type and right place is not easy.	4	2
4	**Entrepreneurial Motivation:** Upon learning the course students will be able to learn the following factors which influence them to become entrepreneurs. Desire to do something new. Become independent. Achieve what one wants to have in life. Be recognized for one's contribution. Reaching new business concepts and idea	4	2 & 3
5	**Entrepreneurship and Small Business in Bangladesh:** A review of attempts - Success and failures - Different schemes of small business development - Exiting schemes and future plans. **Understanding small business** - Practical importance and role of small business throughout the world and in Bangladesh in particular - Career in small business.	3	2 & 3
6	**Starting a Small Business:** Should one operate a small business? SWOT analysis: understanding of strength, weakness, opportunities and threats of the environment - Idea generation: methods of idea hatching and process of idea validation and implementation - Developing a business plan.	4	3 & 4
7	**Management of Small Business:** Understanding various aspects of small business management - Marketing of small business - Production and Operations Management in Small business.	3	2 & 3

SN	CONTENTS	HOURS	CLOs
8	**Small Business Support Services:** Financial support, technical support, accounting support and other supports - Understanding small business support services required at various stages of business growth - Government and non-government support services in Bangladesh.	3	3
9	**Venture Capital Management:** Meaning & Features of Venture Capital; Venture Capital and Entrepreneurial Management Venture Capital fund process; Stages of Financing Offered in Venture Capital	8	3
10	**Business Plan:** Upon completion of the course students will be instructed to write business plans and present the idea to panel.	14	2, 3 & 4

Course Learning Outcome (CLO): By the end of the course, the student will be able to:

Course Learning Outcomes: at the end of the Course, the Student will be able to-

CLO 1	**Describe key concepts and principles** of entrepreneurship and small business management, including the entrepreneurial process, opportunity recognition, and business planning.
CLO 2	**Develop a comprehensive business plan** by applying entrepreneurial tools and techniques for launching and managing a small business.
CLO 3	**Analyze challenges and risks** faced by entrepreneurs and small business owners, proposing strategies for growth, sustainability, and innovation.
CLO 4	**Demonstrate** critical thinking and decision-making skills necessary for solving real-world entrepreneurial problems and managing day-to-day business operations.

Mapping, of Course, Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1	2			
CLO 2		3		
CLO 3		3	3	
CLO 4	2	2	3	

Mapping Course Learning Outcomes (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Problem-based Exercise	Question & Answer
CLO 2	Lecture, Discussion, Problem-based Exercise	Assignment, Quiz, Question & Answer
CLO 3	Lecture, Discussion, Problem-based Exercise	Assignment, Presentation, Quiz, Question & Answer
CLO 4	Lecture, Discussion, Problem-based Exercise	Assignment, Presentation, Quiz, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Class Test/ Assignment/ Presentation	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05			
Understand			05	05
Apply		05	05	05
Analyze			05	05

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	10
Understand	10
Apply	20
Analyze	20

LEARNING MATERIALS

Textbook:

- Zimmerer, T.W. and Scarborough, N. M. ***Essentials of Entrepreneurship and Small Business Management,*** Prentice Hall of India.

- D. Holt, Entrepreneurship: ***A New Venture Creation Prentice*** – Prentice Hall Inc. New Jersy, USA.
- Kent R. Blawatt, ***Entrepreneurship: Process and Management,*** Prentice Hall Inc. Englewood Chiffs USA.

Reference Books:

- Nicholas C. Siropolis, ***Entrepreneurship and Small Business Management,*** Houghton Mifflin Co. Boston, USA.
- Curtis E. Tate, Leon C. Meggision, Charles R. Scott, Lyle R. Trueblood, ***Successful Small Business Management,*** Business Publication, Inc. Texas, USA.

Course Code: MIS 2202
Course Title: Bank and Insurance Management
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

This course is designed to provide students with a comprehensive understanding of the structure, functions, and services of banks and insurance companies. It covers fundamental concepts such as financial intermediation, risk management, regulatory frameworks, and the impact of technology on financial services. Through theoretical knowledge and real-world case studies, students will develop analytical skills and practical insights necessary for careers in banking, insurance, and broader financial services industries.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Introduction:** Bank, Banking, Banker, Customer, objectives and functions of bank, Overview of Banking System around the world, Central Bank, Islamic banking, the Banking system of Bangladesh **Customer's Account with Bank:** Definition and features of different types of accounts, investment decision through analyzing different types of deposit accounts, International settlement of accounts among the banks, electronic banking services: ATM, Debit card, Credit Hourscard, internet banking, mobile banking etc. Negotiable Instrument.	7	1

SN	CONTENTS	HOURS	CLOs
2	**Loans and Advances:** The style of Credit Hoursoperation of a bank, define different types of loans, Loan activities of Bangladeshi banks, Policies of providing Loans and advances: policies of loan operation process, Loan Pricing, Loan Policy, Loan Administration, steps in Loan Operations, Credit HoursAnalysis, Loan documentation, Loan Supervision, Problem Loans, and Handling Problems Loans.	6	2
3	**Letter of Credit:** Definition different types of Letter of Credit, the process of L/C, process of opening procedure of L/C, The Liquid asset: definition of different types of liquid asset, the rules of Bangladesh Bank for SLR and CRR	6	3 & 4
4	**Bank Accounting and Performance Evaluation:** Income Statement: recognize different items of income & expenditure from banking, sector, learn how to calculate profit/Loss for a bank, Performance Evaluation of Bank: Know about the techniques of evaluating the performance of a bank, how to measure the performance of bank, Bank's Financial Statement: Balance sheet: recognize different items of Bank Asset & Liabilities, prepare bank balance sheet.	9	3
4	**Introduction to Insurance:** Definitions, Basic Terminologies, Re-insurance, Double Insurance, Functions, Nature, Kinds of insurance, Role & Importance, Insurance contract, Insurance Law and Regulation	4	1
6	**Risk Management:** The Risk, Uncertainty, Chance and Probability, Classification of risk, Elimination and spreading of risk, Risk management, Risk reducing techniques, Risk Handling	4	2
7	**Marine Insurance:** Knowledge about Nature, Classes of Policies, Marine Perils, Marine losses, Bottomry Bonds, Respondentia Bonds, Payment of claim, Calculation of loss and premium in Marine insurance. **Fire insurance:** definition & Nature, Elements of fire insurance contract, Kinds of Policies, Payment of claim, Calculation of loss and premium in Fire Insurance. **Life Insurance:** Nature, Classification, Annuities, Selection of Risk, Treatment of sub-standard risk, The reserve, Payment of claim, Calculation of loss and premium in Life insurance.	6	1 & 2

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Understand** the functions and activities of Banking Systems.
CLO 2	**Apply** the overall process of opening Letter of credit, significance of L/C along with advantages and disadvantages; be acquainted with different types of L/C and its features.
CLO 3	**Evaluate** the performance of the bank on the basis of ratio analysis.
CLO 4	**Create** financial statements of the Bank, and **estimate the amount** of insurance premium for life, marine & fire insurance.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1	2			
CLO 2		2	3	
CLO 3		3	3	
CLO 4	2	2	3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	**Teaching-Learning Strategy**	**Assessment Strategy**
CLO 1	Lecture, Discussion, Problem based Exercise, Case Study, Student interaction by using different tools, Group discussion.	Assignment, Quiz, Question & Answer
CLO 2	Lecture, Discussion, Problem based Exercise, Case Study, Student interaction by using different tools, Group discussion.	Assignment, Quiz, Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise, Case Study, Student interaction by using different tools, Group discussion.	Assignment, Quiz, Question & Answer
CLO 4	Lecture, Discussion, Problem based Exercise, Case Study, Student interaction by using different tools, Group discussion.	Assignment, Quiz, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Class Test/ Assignment/ Presentation**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	05			
Understand			05	05
Apply		05	05	05
Analyze			05	05

SEE – Semester End Examination [60 marks]

Bloom Criteria	**Score for the Test**
Remember	10
Understand	10
Apply	20
Analyze	20

LEARNING RESOURCES

Recommended Reading:

- Edward W. Reed and Edward K. Gill. ***Commercial Banking***. Prentice - Hall, USA
- The Bangladesh Banks (Nationalization) Order, 1972
- Mehr, R. J. and Commeck, E. ***Principles of Insurance***. Richard D. Irwin, Inc. USA.
- Williams, C.A., Young, P.C. and Smith, M.L. ***Risk Management and Insurance***. McGraw-Hill publishers, USA.

Supplementary Readings:

(a) Commercial Bank Management, Peter S. Rose (Latest Edition)

(b) Modern Banking, Shelagh Heffernan, (Latest Edition)

(c) Bank Management- A Fund Emphasis by Dr. A R Khan

(d) Banking Law and Practice by Syed Ashraf Ali & R.A. Howlader

(e) Insurance Manual by IDRA

Course Code: MIS 2203
Course Title: Operations Management
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE: Operations Management (OM) is concerned with the management of resources and activities that produce and deliver goods and services for customers. Efficient and effective operations can provide an organization with major competitive advantages since the ability to respond to customer and market requirements quickly, at a low cost, and with high quality, is vital to attaining profitability and growth through increased market share. As competition becomes fiercer in an increasingly open and global marketplace, a company's survival and growth become greatly contingent on its ability to run its operations efficiently and to exploit its resources productively.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Operations And Competitiveness:** Definition of Operations Management & Operation- The Operation functions & its Activities Operations Management in an E-Business Environment- Competitiveness & Measure of Competitiveness through Productivity and Productivity improvement- Barriers to Entry for new firms	5	CLO 2
2	**Operations Strategy:** Define Strategy-Competitive Priorities of a company – Strategic Decisions in Operations Strategy Deployment & Effective ways to deploy strategy	2.5	CLO 2
3	**Operational Decision -Making Tools: Decision Analysis**: Elements of Decision Problems, Decision Making Under Certainty, Decision Making Under Risk (EMV, EOL, EVPI) - Decision Making Under Uncertainty (Pessimistic, Optimistic, Equal probability, Regret, Hurwicz criterion).	7.5	CLO 1 & 3
4	**Process And Technologies:** Defines Process- Process Strategy-Process Selection with Break –Even Analysis- Process Planning (Make –or-Buy decisions)- Process Analysis- Process Reengineering.	5	CLO 3 & 4
5	**Inventory Management:** Nature of Inventory Problem- Inventory Cost- EOQ model with Static demand- EOQ Model with Non instantaneous Receipt -Quantity Discounts with Constant Carrying cost.	5	CLO 3 & 4
6	**Quality Management:** Meaning of Quality from Consumer's Perspective and Producers Perspective- Total Quality management (TQM)- Principles of TQM- The Cost of Qualit	5	CLO 2, 3 & 4
7	**Project Management:** Project Planning, Elements of a Project Plan, Project Management Tools, Global and Diversity Issues in Project Management,	2.5	CLO 2

SN	CONTENTS	HOURS	CLOs
	Project Scheduling, Project Control.		
8	**Project Schedule: PERT and CPM**: Schedule- Benefits of Scheduling- CPM & PERT- Activity, Event, Path & Dummy activity- Calculation of activity and event slack, PERT uses three times estimates- Project Scheduling using MS Project 2007	5	CLO 3 & 4
9	**Process Capability and Statistical Process Control**: Meaning- Quality Measures- Statistical Process Control (SPC) Procedure- Control charts- p chart, c chart, mean chart, range chart- Process capability analysis.	2.5	CLO 2 & 3
10	**Review**	2.5	

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Explain** the role of operations management in supporting an organization's strategic objectives and improving overall business performance.
CLO 2	**Analyze** and apply key concepts and techniques (such as process design, quality management, supply chain management, and inventory control) to solve real-world operational problems.
CLO 3	**Evaluate** and optimize operational processes using quantitative and qualitative tools to enhance efficiency, productivity, and quality.
CLO 4	**Demonstrate** effective decision-making and problem-solving skills in operations planning, scheduling, and resource allocation within various types of organizations.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	2			
CLO 2		3		
CLO 3		2	3	
CLO 4		2	3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Problem based Exercise,	Assignment, Quiz, Question & Answer

CLOs	Teaching-Learning Strategy	Assessment Strategy
	Demonstration	
CLO 2	Lecture, Discussion, Brain storming, example generation.	Verbal Feedback, Quiz, Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise, Case Study	Assignment, Quiz, Question & Answer
CLO 4	Lecture, Discussion, Problem based Exercise, Case Study	Assignment, Quiz, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Class Test/ Assignment/ Presentation	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05			
Understand			02	02
Apply		05	05	05
Analyze			05	05
Evaluate			03	03

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	05
Understand	05
Apply	20
Analyze	20
Evaluate	10

LEARNING MATERIALS

Text Book:

- Chase, Jacobs and Aquilano ***Operations Management for Competitive Advantage***, McGraw-Hill Publications. USA

- Lee J. Krajewski and Larry P. Ritzman, ***Operations Management: Strategy and Analysis,*** Addison Wesly Publishing Company, USA.

Reference Books:

- Schroeder, R.G. ***Operations Management: Contemporary Concepts and Cases,*** McGraw-Hill Publications, USA.

Course Code: MIS 2204
Course Title: Auditing, Taxation and IT
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

This course is designed to enhance students' understanding of auditing, taxation and the application of IT in these subject areas as well as its critical role in ensuring the accuracy and reliability of financial information. It will familiarize students with key concepts, types, objectives, and limitations of auditing. Additionally, the course will explore auditing and taxation standards, ethical considerations, and various components of audit reports, emphasizing their practical significance and value.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Introduction to Audit and Assurance Engagements:** The Meaning, Definition, Elements and Scope of Audit, Objectives of Audit, Need for and Purpose of Audit, Types and Classes of Audit, Cost Audit; Interim and Final audit , Management audit, Social audit, Due diligence audit, Forensic audit, Fraud audit, System audit, Advantages of Auditing, Differences between Accounting and Auditing, Auditing vs. Assurance, Definition, Elements of Assurance Engagements, Audit as an Assurance Engagement, Levels and Benefits of Assurance, Limitations of Assurance etc.; The Expectations Gap; Assurance and Non-assurance Engagements; Audit, Review, and Compilation; Corporate governance.	3	1
2	**Audit Planning and Documentation:** Audit planning, Audit strategy, Structured Planning of an audit and designing an audit approach, Key contents of overall audit strategy, Interim and final audits, Understanding the Entity and its Environment, Analytical procedure. Audit documentation, Purpose of documentation, Form and content of documentation.	3	1
3	**Risk Assessment & Internal Control:** Audit risk, Types of audit risks, Audit risk model, Risk of Material Misstatements in financial statements,	4	2

SN	CONTENTS	HOURS	CLOs
	Assessing the Risk of Material Misstatements, Identifying and assessing the risks, Significant risks, Materiality, Materiality in planning and performing an audit, Fraud and error. Meaning of internal control, Components of internal control, Tests of control (revenue or sale, and purchase system), Internal controls in a computerized environment; Audit committee.		
4	**Audit Evidence:** Meaning of audit evidence, Sufficient appropriate audit evidence, Quality of evidence, Financial statement assertions, Techniques of gathering audit evidence (Types of audit evidence), Substantive procedure (Non-current asset, Inventory etc.), Analytical procedure, Computer assisted audit techniques (CAATs), Audit software, Directional testing, Audit of accounting estimates, Audit sampling.	3	2
5	**Audit Conclusions and Reporting:** Auditor's Report; Basic elements of Auditor's Report; Types of Audit Reports; Unmodified (unqualified) opinions, Modified opinions (qualified, adverse, disclaimer); Communication with shareholders, those charged with governance, and management. ISA 701, Communicating Key Audit Matters in the Independent Auditor's Report; and the new reporting requirements in ISA 570 (Revised), Going Concern.	3	1 & 2
6	**Taxation and Public Finance:** Public finance with its importance, functions and scopes, concepts of citizenship responsibility and tax burden, tax assessment of the individual taxpayers with incomes from multiple heads and investment allowances	3	3
7	**Assessment of companies:** Determination of residential status of the companies, scope of income of the companies, calculation of total taxable income of the companies, tax payable amount of the companies, CSR activities and their impact on the tax assessment of the companies.	4	3
8	**Value Added Tax Assessment:** Concept of Value addition tax (VAT) and tax calculation on it, Determination of value addition, VAT mechanism, Sales tax Vs VAT, New VAT ACT 2012	3	3 & 4
9	**Gift Tax and Wealth Tax:** The concepts of gift tax and wealth tax for the understanding of gift tax and wealth tax, determination of taxable gift, tax on the gift, tax exempted gifts and its limit, the purposes of wealth tax and its impact, Provident, Superannuating, Pension and Gratuity Funds, tax audit and investigation.	5	3 & 4
10	**The Customs Act. 1969:** Exponentiation & Restriction on import &	3	3 & 4

SN	CONTENTS	HOURS	CLOs
	Exportation - Exemptions – Drawbacks – Clearance of Goods for home consumption – Prevention of smuggling – offenses & penalties.		
11	**Industry Engagement:** To bridge theoretical knowledge with professional practice, students will engage in small but comprehensive case studies covering auditing, taxation, and IT applications in financial reporting. Practical exposure will be enhanced through field visits to CA firms, where students will observe real-world audit and tax procedures, including the use of auditing software and IT-based control systems. Industry visits will also be organized to explore internal control mechanisms and IT-enabled audit trails. Furthermore, seminars and workshops featuring Chartered Accountants and industry professionals will be conducted to provide insights into current practices in internal auditing, external auditing, taxation, and the integration of IT in assurance services.	12	3 and 4

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Understand** a comprehensive understanding of the core principles and standards of auditing and taxation, including audit engagements, tax regulations, internal control systems, risk assessment, and the integration of IT tools in financial assurance and tax compliance.
CLO 2	**Analyze** audit procedures, tax practices, and IT-supported systems in relation to organizational processes, compliance with audit and tax standards, ethical considerations, and legal requirements such as those specified in Company Act.
CLO 3	**Evaluate** the effectiveness of audit planning, documentation, tax computation, and the use of IT in enhancing transparency, internal controls, and decision-making within audit and taxation practices.
CLO 4	**Create** appropriate audit and tax documentation, generate audit findings or tax reports, and utilize IT-based solutions (e.g., accounting software, audit tools) to support audit conclusions and ensure compliance with professional standards.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	2			
CLO 2		2		
CLO 3			2	
CLO 4			2	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Scenario based illustration, Small case analysis	Question & Answer, Case study
CLO 2	Lecture, Discussion, Scenario based illustration, Small case analysis	Question & Answer, Case study
CLO 3	Lecture, Discussion, Scenario based illustration, Small case analysis, Industry engagement	Question & Answer, Case study, Report submission and presentation
CLO 4	Lecture, Discussion, Scenario based illustration, Small case analysis, Industry engagement	Question & Answer, Case study, Report submission and presentation

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05			
Understand		02	05	
Apply			05	05
Analyze		03	05	05
Create				05

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	5
Understand	10
Analyze	15
Evaluate	15
Create	15

LEARNING MATERIALS

Recommended Reading:

(a) Auditing: An Integrated Approach by Alvin A. Arens & J. K. Loebbecke, Latest Edition, Prentice Hall International Inc.

(b) Public Finance by Musgrave & Musgrave.

(c) Law & Practice of Bangladesh Taxation by M. A. Baree.

(d) Acts relevant to Income Tax ACT 2023, VAT and SD ACT 2012

Supplementary Readings:

- Principles of Auditing by Khawaja Amjad Saeed, Latest Edition, Khawaja Publications.
- Code of Ethics for Professional Accountants by IFAC.
- Modern Auditing and Assurance by Gill, Latest Edition, Wiley
- Bangladesh Income Tax: Theory and Practice (Income Tax, Vat, Gift Tax, Customs); by Shil, N. C., Masud, M. Z., and Alam, M. F.
- Three Taxes & Customs Duties of Bangladesh by Fazlul Huq, M.A. Akkas & A. S. M. Ashif, Mallick & Brothers, Dhaka.

Course Code: MIS 2205
Course Title: Programming Fundamentals
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

The objective of the Programming Fundamentals course is to introduce students to the foundational concepts of computer programming and problem-solving. By the end of the course, students will be able to understand and apply basic programming constructs such as variables, data types, control structures, functions, arrays, and object-oriented principles. The course aims to develop students' logical thinking and analytical skills through hands-on coding exercises and projects, preparing them for more advanced programming courses and real-world software development.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Introduction to Programming** Overview of programming languages, Introduction to compilers and interpreters, Working with IDEs, Writing and executing a simple program	3	CLO 1
2	**Basic Programming Concepts** Variables and data types, Constants and literals, Input and output operations	3	CLO 1
3	**Operators and Expressions** Arithmetic operators, Relational operators, Logical operators, Assignment operators, Operator precedence and associativity, Type conversion and casting	2	CLO 1
4	**Functions and Modular Programming** Function definition and invocation, Function parameters and return types, Scope of variables, Recursive functions	2	CLO 1
5	**Introduction to Pointers** Memory addressing, Pointer declaration and initialization, Pointers and arrays, Pointer arithmetic, Pointers to functions	2	CLO 2
6	**Introduction to Object-Oriented Programming (OOP)** Concept of classes and objects, Encapsulation, Inheritance, Polymorphism (basic introduction)	2	CLO 3

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Understanding** basic programming concepts, including variables, data types, control structures, and functions.
CLO 2	**Apply** problem-solving skills to develop simple programs using arrays, strings, and user-defined data types.
CLO 3	**Analyze** the implementation of modular code using functions and apply debugging

	techniques to identify and fix errors.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1	3			
CLO 2			2	
CLO 3				3

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	**Teaching-Learning Strategy**	**Assessment Strategy**
CLO 1	Lecture, Discussion	Quiz, Question & Answer
CLO 2	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise	Quiz, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Assignment/ Presentation/ Class test (05)**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	5			
Understand			5	5
Apply		5	5	5
Analyze			5	5

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	00
Understand	20
Apply	20
Analyze	20

LEARNING MATERIALS

Recommended Reading:

- Peter Van Roy and Seif Haridi, Concepts, Techniques, and models of Computer Programming, The MIT Press, USA.

Course Code: MIS 2206
Course Title: Programming Fundamentals Lab
Credit Hours: 01
CIE Marks: 40
SEE Marks: 60

RATIONALE

The **Programming Fundamentals Lab** course is designed to give students hands-on experience in basic programming concepts through practical exercises. It helps learners understand how to write, debug, and execute simple programs using structured logic and algorithms. By working with variables, control structures, loops, and functions, students develop problem-solving and computational thinking skills. This lab reinforces theoretical knowledge from classroom lectures and builds a strong foundation for advanced programming courses. It prepares students to confidently write code, analyze logic, and approach real-world computing tasks effectively.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Operators and Expressions** Arithmetic operators, Relational operators, Logical operators, Assignment operators, Operator precedence and associativity, Type conversion and casting	9	CLO 1
2	**Control Structures** If and if-else statements, Switch-case statement, While loop, Do-while loop, For loop, Nested loops, Break and continue statements	9	CLO 1
3	**Functions and Modular Programming** Function definition and invocation, Function parameters and return types,	9	CLO 2

SN	CONTENTS	HOURS	CLOs
	Scope of variables, Recursive functions		
4	**Arrays and Strings** One-dimensional arrays, Multi-dimensional arrays, Array traversal and manipulation, Basic string operations and functions	9	CLO 2
5	**Structures and User-Defined Data Types** Structure declaration and usage, Nested structures, Enumerations, Unions	9	CLO 3
6	**Debugging and Error Handling** Types of errors, Debugging techniques, Introduction to exception handling	9	CLO 3
7	**Mini Projects and Case Studies** Application of programming concepts, Individual or group mini projects, Real-world problem-solving	9	CLO 3

Course Learning Outcome (CLO): By the end of the course, students will be able to:

CLO 1	**Understand** basic programs using fundamental programming constructs such as variables, loops, and conditional statements.
CLO 2	**Apply** logical thinking and algorithmic techniques to solve simple computational problems.
CLO 3	**Evaluate** and execute basic projects that integrate core programming principles and demonstrate practical coding ability.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1	2			
CLO 2		3		
CLO 3			3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion	Lab Performance, Lab Report/Project., Lab Work

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 2	Lecture, Discussion, Problem based Exercise	Lab Performance, Lab Report/Project., Lab Work
CLO 3	Lecture, Discussion, Problem based Exercise	Lab Performance, Lab Report/Project., Lab Work
CLO 4	Lecture, Discussion, Problem based Exercise	Lab Performance, Lab Report/Project., Lab Work

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	Lab Report 1 (15)	Lab Report 2 (15)
Remember	5			
Understand		5	5	5
Apply			10	10

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	00
Understand	20
Apply	20
Analyze	00
Evaluate	20
Create	00

LEARNING MATERIALS

Recommended Reading:

- Peter Van Roy and Seif Haridi, Concepts, Techniques, and models of Computer Programming, The MIT Press, USA.

Course Code: MIS 2207
Course Title: Viva-Voce
Credit: 02
CIE Marks: 0
SEE Marks: 100

Course Code: MIS 3101
Course Title: Human Resource Management
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

This course aims to equip students with foundational knowledge of human resource management (HRM) principles and practices, both within local and global contexts. It emphasizes the importance of HRM in ensuring compliance with internal policies and external regulations. Key topics covered include job analysis, workforce planning, recruitment, selection and placement, onboarding and integration, employee training and development, performance evaluation, job structuring, job valuation, and compensation and benefits management.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Introduction to HRM:** Concept of HRM, Specific challenges of modern HRM, The HR manager's Proficiencies, Principles of HRM and Approaches to HRM.	5	CLO 1 and 2
2	**Human Resource Planning and Job Analysis:** Define HR Planning, Succession Planning, the Process of HR Planning, the basics of job analysis, methods of collecting job analysis information, writing job descriptions, writing job specifications, job analysis in a jobless world, The basics of job analysis, methods of collecting job analysis information, Writing job description, writing job specification, job analysis in a jobless world.	5	CLO 1 and 2
3	**Recruitment and Selection:** Differences between recruitment and selection, The recruitment and selection process, internal source of candidate, outside source of candidate, basic testing concept, types of employment tests, Best ways of interviewing candidates, Common mistakes in the selection of employees, when to reject resumes, Ways of making an effective employee selection.	3	CLO 2
4	**Training and Development:** Orienting employees, Differences among training, development, education, and learning, the training process, training methods, evaluating the training need analysis, Reasons for the failure of training, Suggestions to make effective training programs, Training practices in Bangladesh.	5	CLO 2
5	**Compensation and Benefits:** Meaning of compensation, Distinctions between wage and salary, Compensation Benefit, Basic factors of determining pay rates, establishing pay rates, and competency-based pay.	3	CLO 2

SN	CONTENTS	HOURS	CLOs
6	**Performance Appraisal and Management:** Basic concept of performance management and appraisal, Methods of performance appraisal, Qualities of a good performance appraisal, appraising performance: problem and solution, Appraisal system in Bangladesh.	4	CLO 2 & 3
7	**Employee Relation and Legal Compliance:** Union and the labor law, moral motivation, daily and weekly hour provisions for employees, Leave allowances for general employees, Provisions regarding maternity & paternity leave allowances, Collective bargaining, and Collective Bargaining Agent (CBA).	3	CLO 3
8	**Conflict Management and Negotiation:** Concept of conflict, Stages of conflict, types and sources of conflict, conflict management strategies, grievance and conflict resolution, process of Negotiation.	3	CLO 3
9	**Employee Safety and Health:** Legislation and Policy, Workplace Hazards, Hazardous substances & guidelines, Health risks at work, Equipment and safe working practice, Promoting Health at Work, Causes of industrial accidents, Measures to ensure industrial safety.	3	CLO 3
10	**Contemporary Issues in HRM:** E-HRM, Green HRM, Talent Management, Work-life Balance, HR Organizations, Human Resource Accounting (HRA), Employability & Soft Skills, HR Value Proposition, Strategic Perspective of HR, HRIS	2	CLO 3
11	**Industry Engagement:** A seminar, workshop, or masterclass will be organized for students on Human Resource Policies and Practices or other relevant topics.	12	CLO 2 & 3

Course Learning Outcome (CLO): By the end of the course, the student will be able to:

CLO 1	**Understand** the concept of HRM, Challenges, Principles, and different approaches of HRM, Human Resource Planning and Job Analysis, Recruitment and Selection, Training and Development, Compensation and Benefits, Performance Appraisal and Management, Employee Relations, and Legal Compliance, Conflict Management, and Negotiation, Employee Safety and Health, Contemporary Issues in HRM.
CLO 2	**Apply** the Human Resource Planning and Job Analysis information, Recruitment and Selection process, training and development process, performance appraisal process, problems and solutions, Compensation and benefits packages, Provisions for employee relations, different types of conflicts and sources of conflicts, and different workplace safety issues. Different contemporary issues in HRM

CLO 3	**Evaluate** different resolution of conflict management, Contemporary issues of HRM in different areas of the organization, Employee Relations and Legal Compliance issues in different industries, processes, and methods of recruitment and selection, training and development and performance appraisal management, Job analysis and HR planning of various industry, different approaches and challenges of HRM

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1	3			
CLO 2		2		
CLO 3			2	

Mapping Course Learning Outcomes (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	**Teaching-Learning Strategy**	**Assessment Strategy**
CLO 1	Lecture, Discussion, Case Study	Assignment, Quiz, Question & Answer
CLO 2	Lecture, Discussion, Case Study	Quiz, Question & Answer
CLO 3	Lecture, Discussion, Case Study	Quiz, Assignment, Question & Answer
CLO 2 & 3	Lecture, Discussion, Industry Engagement	Question & Answer, Report submission, and presentation

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Assignment/Presentation/Class test (05)**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	05		02	
Understand		02	03	05
Apply			05	05

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Analyze		03	05	05

SEE – Semester End Examination [60 marks]

Bloom Criteria	The score for the Test
Remember	10
Understand	10
Apply	10
Analyze	10
Evaluate	20

LEARNING MATERIALS

Recommended Readings:

Dessler, G. (2019). Human Resource Management. United Kingdom: Pearson.

Supplementary Readings:

DeCenzo, D. A., Robbins, S. P., Verhulst, S. L. (2016). Fundamentals of Human Resource Management. United States: Wiley.

Course Code: MIS 3102
Course Title: Fundamentals of Information Security
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

Security has become a critical concern for individuals, organizations, and nations alike. This course explores the dynamic and increasingly digital landscape, highlighting the importance of protecting personal, organizational, and national data. Students will learn core cybersecurity principles, analyze emerging technologies, assess potential threats and defenses, and gain insight into the wide range of high-demand, high-paying career paths available in the IS security sector.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Cyber Security Fundamentals:** concept of cyberspace and cyber security, why is cyber security important, concept of hacker, define vulnerability and risk, explain why organizations need to manage risk. identify the concepts of cyber security risk management, describe cyber security threats to an organization, analyze risks affecting critical infrastructure	6	CLO 1
2	**Cyber Threats and Vulnerabilities:** differentiate between a cyber-threat and a vulnerability, describe types of cyber threats, analyze types of current cyber threats, describe the concept of malware and the techniques to guard against it, describe the characteristics of vulnerabilities, identify the prevention of and protections against cyber threats	6	CLO 1
3	**Ethics & Law Relates to Cyber Security:** differentiate between ethics and laws, distinguish among types of ethical concerns, define cyberbullying, identify actions that constitute cyberbullying, identify possible warning signs of someone being cyberbullied, demonstrate net etiquette as it relates to cyber security, identify laws applicable to cyber security	3	CLO 2
4	**Cryptography and Digital Forensics:** concept of cryptography and digital forensics, basic terminology, functions of cryptography, benefits of digital forensics on cyber security, recent digital forensic trends	6	CLO 2
5	**Cyber Risk & Cyber Insurance:** concept of cyber risk and cyber insurance, why is cyber insurance important, how does cyber insurance work, who needs cyber insurance, what is covered and not covered by cyber insurance, how to choose a cyber security insurance policy and how much does cyber insurance cost	3	CLO 3
6	**Data Privacy and Data Security:** distinguish between data, information,	6	CLO 3

SN	CONTENTS	HOURS	CLOs
	and knowledge, why personal data is valuable to both an individual and to organizations, the techniques used to collect personal data through social media, web tracking, and mobile devices, explain the difference between data at rest, data in transit, and data being processed, discuss how data can be compromised, corrupted, or lost, explain how businesses and individuals can protect themselves against threats to their data.		
7	**Information Technology (IT) Audit:** concept of it audit, types of it audits, principles of an it audit, history of it auditing, it audit objectives, how to plan an it audit, it audit process, emerging issues	6	CLO 4
8	**Cyber Security Careers:** identify possible career opportunities, identify the educational pathways for emerging cyber security professionals, identify career paths and job titles within the cyber security and/or cyber forensics industry and career clusters, research the cyber threats and security measures related to career pathways, exploring cyber security implications for current and emerging technologies, preparing for industry certification	6	CLO 4

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	Understand the principles of the cyber security with possible Cyber Threats and Vulnerabilities.
CLO 2	Apply the concepts and functions of cryptography, digital forensics, the ethics and laws related to cyber security.
CLO 3	Analyze different cyber risk & insurance and importance of cyber Insurance.
CLO 4	Evaluate the basic concept of data Integrity and data security.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1	2			
CLO 2		2		
CLO 3			2	

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 4			2	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Case Study	Question & Answer
CLO 2	Lecture, Discussion, Case Study	Assignment, Question & Answer
CLO 3	Lecture, Discussion, Case Study	Quiz, Question & Answer
CLO 4	Lecture, Discussion, Case Study	Assignment, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Assignment/ Presentation/ Class test (05)**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	05		02	
Understand		02	03	05
Apply			05	05
Analyze		03	05	
Evaluate				05

SEE – Semester End Examination [60 marks]

Bloom Criteria	**Score for the Test**
Remember	10
Understand	10
Apply	10
Analyze	15
Evaluate	15

LEARNING MATERIALS

Recommended Reading:

CEH v9: Certified Ethical Hacker Version 9, by Oriyano, published by Sybex; 9th Edition, 2016, ISBN: 978-1-119-25224-5.

Supplementary Readings:

Fundamentals of Cyber securities by Jack Ruman; Latest Edition.

Course Code: MIS 3103
Course Title: International Business
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

The International Business is an authoritative and engaging voice on conducting business in international markets. This text not only describes the ideas of international business but it also uses contemporary examples, scenarios, and cases to help students effectively put theory into practice. Hill's book is practical in nature, focusing on the managerial implications of each topic on the actual practice of international business.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Globalization:** Concept of Globalization, Drivers of Globalization, Global Economy, The changing FDI	6	1
2	**Differences in culture:** Understand culture, Social structure, Individuals, groups, Religious and ethical systems, Language, Education, Culture and the workplace, Cultural change	4	1
3	**Ethics, Corporate social Responsibility, and Sustainability:** Ethics and International Business, Ethical Decima, The roots of unethical behavior, Corporate Social Responsibility, Sustainability	4	2

SN	CONTENTS	HOURS	CLOs
4	**International Trade Theory:** Overview of trade theory, Mercantilism, Absolute advantage, comparative advantage, international product life-cycle theory, New trade theory, National competitive advantage: Porter's Diamond	4	2
5	**Foreign Direct Investment:** Demonstrate Foreign Direct investment, Theories of foreign direct investment, Political ideology and foreign direct investment, Benefits and costs of FDI, Government policy instruments and FDI	4	3
6	**The Foreign Exchange Market:** The functional of the Foreign Exchange Market, Economic Theories of Exchange rate Determination, Exchange Rate Forecasting, Currency Convertibility	4	1
7	**The Strategy of International Business:** International business Strategy and the firm, Global expansion, profitability and profit growth, Cost pressures and pressures for local responsiveness, Choosing a strategy	4	3
8	**Exporting, Importing and Countertrade:** advantages and pitfalls of exporting, improving export performance, Export and import financing, Export assistance, and Countertrade	2	1
9.	**Global Production and Supply Chain Management:** Strategy, Production, and Supply Chain Management; Where to Produce; Flexible Manufacturing and Mass Customization; Locating Production Faculties; Global Supply Chain Functions; Managing a Global Supply Chain	4	3

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	Understand the concept of Globalization and International business.
CLO 2	Applying the concept of Ethics, Corporate social Responsibility, and Sustainability in the practice of International Trade and Business.
CLO 3	Analyzing the concept of international business.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	2			
CLO 2		1		
CLO 3			2	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO 2	Lecture, Discussion, Problem based Exercise	Assignment, Quiz, Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise	Presentation, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Class Test/ Assignment/ Presentation	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05			
Understand			05	05
Apply		05	05	05
Analyze			05	05

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	10
Understand	10
Apply	20
Analyze	20

LEARNING MATERIALS

Textbook:

Daniels| Radebaugh Sullivan, International Business: Environments and operations, Pearson International Latest edition

Reference Book:

Charles W. Hill, International Business: competing in the global marketplace, Latest edition, McGraw Hill

Course Code: MIS 3104
Course Title: Statistics for Business
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

The "Statistics for Business" course equips students with essential analytical skills to make data-driven decisions in a dynamic business environment. It covers fundamental statistical concepts, data interpretation, and quantitative techniques, fostering critical thinking and problem-solving abilities. By applying statistical tools to real-world business scenarios, students learn to analyze trends, assess risks, and support strategic planning. This course lays the foundation for effective decision-making across various business functions, including marketing, finance, and operations.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Chapter 01: Introduction to Business Statistics:** Meaning and Definition of Statistics; Types of statistics; Characteristics; Why we study Statistics; Scopes and applications of statistics in Business; Limitations and misuses of statistics; Population and sample; Parameter and statistic, Meaning of data, types of data; Sources of statistical data; Data collection tools; Variable and types of variable; Level of measurement.	6	1
2	**Chapter 02: Describing Data: Numerical Measures:** Ungrouped data and Grouped Data**,** Arithmetic Mean, Median, Mode, variance, and standard deviation with uses, advantages and limitations.	6	2
3	**Chapter 03: A Survey of Probability Concepts:** Basic Probability Theory, Additional Law, Conditional Law, Multiplication Law, Independent Laws, Complementary Laws, Bayes Theorem	6	2
4	**Chapter 04: Discrete Probability Distributions:** Random Variable and	6	3

SN	CONTENTS	HOURS	CLOs
	Probability Distribution, Binomial distribution, Poisson distribution		
5	**Chapter 05: Continuous probability distribution:** Normal distribution- Family of Normal Probability Distribution, Estimation.	6	3
6	**Chapter 06: Hypothesis:** What is a hypothesis? z-value, p-value, one sample hypothesis test, the process of the hypothesis test. Z-test, t-test.	6	4
7	**Chapter 07: Correlation and Linear Regression:** Correlation, calculation of correlation coefficient, Simple regression, Forecast the future value using the regression equation, Related mathematical problem, ANOVA(one way ANOVA)	6	3

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Understand** the statistics, measures of central tendency, measures of dispersion, graphical presentation of data, basic concepts of probability, different types of probability, different types of probability distribution, the concept of hypothesis, different methods of forecasting
CLO 2	**Apply** the rules of measures of central tendency in practical area, the rules of measures of dispersion in practical area, the basic rules of probability, tree diagram, rules of conditional probability, probability distribution, and hypothesis test, forecasting.
CLO 3	**Analyze** the graphical presentation, the result of basic rules of probability, tree diagram, rules of conditional probability, probability distribution, hypothesis test, and forecasting.
CLO 4	**Evaluate** the hypothesis result of a business problem.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLO / CLO	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	2			
CLO 2			3	
CLO 3				3
CLO 4				3

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, and Discussion	Question & Answer (Theory)
CLO 2	Lecture, Discussion, Problem based Exercise	Problem solving

CLO 3	Lecture, Discussion, Problem based Exercise	Question & Answer (Theory), Problem solving
CLO 4	Lecture, Discussion, Problem based Exercise	Question & Answer (Theory), Problem solving

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Assignment/ Presentation/ Class test (05)**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	5			
Understand			5	
Apply		5	5	5
Analyze			5	5
Evaluate				5
Create				

SEE – Semester End Examination [60 marks]

Bloom Criteria	**Score for the Test**
Remember	
Understand	15
Apply	15
Analyze	15
Evaluate	15

LEARNING MATERIALS

Recommended Reading:

Statistical Techniques in Business & Economics (latest Edition); Wathen, S.A., Lind, D.A. and Marchal, W.G.

Supplementary Readings:

1. Business Statistics- Groebner, Shannon, and Fry (10th Edition)
2. Business Statistics – S. P Gupta, M. P Gupta
3. David, R. Anderson, Dennis J. Sweeney and Thomas A. Williams, Statistics for Business

Course Code: MIS 3105
Course Title: **Programming for IS**
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE

Programming is everywhere. In almost every aspect of our lives, we interact with software applications. From mobile apps and operating systems to sophisticated enterprise-scale applications and artificial intelligence, all of these and even more are created with programming. This course is designed to make students familiar with the rapidly expanding field of computer programming in the business sector. There are so many different programming languages to learn. Out of all the coding languages that are available, Python is the easiest to understand and write. Python is a powerful, versatile cross-platform programming language that has a strong presence in diverse software engineering disciplines, including web development, information security, network scripting, data science, and embedded systems.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1	**Introduction to Computers and Programming:** Hardware and Software, difference between system software and application software, How Computers Store Data, How a Program Works, what is computer programming, history, popular programming languages and their uses, Key Words, Operators, and Syntax: an overview, Compilers and Interpreters	2	CLO 1
2	**Introduction to Python:** What is Python, what can python do, why python, applications of Python/uses of Python, Python syntax compared to other programming languages, features of Python Programming Language, implementations of Python, and Python career opportunities.	3	CLO 2
3	**Python Language Syntax, Keywords and Identifiers:** Modes of Programming in Python, Interactive mode programming, script mode programming, creating a Python program file, Python identifiers, Python keywords, lines, and indentation, spilt Python statements, join Python statements, writing code blocks, comments, and quotations in Python, Python keywords or reserved words, Python keywords define the syntax and structure of the Python language, Python keywords are case sensitive, Python literals (True, False, Null), Python identifiers, class names, variable names, function names, method names, and identifier naming rules.	3	CLO 3
4	**Python Variables and Data Types:** What is variable, declaration of variables, assign values to variables, initialization, reading, variable naming restrictions, types of Python variables, what is data type, implicit declaration of data types, Python numbers (integers, floating-point numbers, and complex numbers), Python	3	CLO 3

	strings, Python Boolean data type.		
5	**Python Operators:** Python arithmetic, comparison/relational operators, increment operators, logical operators, Python identity operators, and Python operators precedence.	3	CLO 3

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	Understand fundamentals of computer programs, terminology, and the background of computer programming..
CLO2	Apply the knowledge of the Python programming language by experiencing various Python syntax, keywords, and identifiers.
CLO3	Analyze the process of representing and storing data using Python data types, operators, and variables, and use conditionals and loops to control the flow of programs.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO1	PLO2	PLO3	PLO4
CLO1	2			
CLO2			3	
CLO3				2

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion	Quiz, Question & Answer
CLO2	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO3	Lecture, Discussion, Problem based Exercise	Quiz, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Assignment/Presentation/Class test (05)**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	5			
Understand		5	5	5
Apply			5	5
Analyze			5	5
Evaluate				
Create				

SEE – Semester End Examination [60 marks]

Bloom Criteria	**Score for the Test**
Remember	
Understand	20
Apply	20
Analyze	20

LEARNING MATERIALS

1) Recommended Reading:

Introduction to Programming Using Python, David I. Schneider, 1st Edition (2015), Pearson Publication

2) Supplementary Readings:

Introduction to Programming Using Python, Y. Daniel Liang**,** Latest Edition, Pearson Publication

Course Code: MIS 3106
Course Title: **Programming for IS Lab**
Credit Hours: 01
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE: Learning computer programming ensures that students have access to the creative, fast-paced world that relies on machine connections. Students can apply these skills to so many different industries and disciplines. Students that want a creative job can delve into 3D animation, web design, or even branding.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
16.	**Download & Install Python:** Download operating system compatible Python Interpreter, install Python, set environment variable, customize Python shell, write & execute Python programs using Interactive mode and script mode. Python PyCharm or IDE, set Python for PyCharm IDE, configure PyCharm IDE, write & execute Python programs.	4	1
17.	**Conditional Statements and Loops in Python:** If else and Nested If else and elif, For Loop, While Loop & Nested Loops	8	1
18.	**Python Collections (Arrays):** List, Tuple, Sets and Dictionary	6	1
19.	**Classes in Python:** New style classes, creating classes, instance methods, inheritance, polymorphism, exception classes and custom exceptions	6	1
20.	**Writing GUIs in Python (Tkinter):** Introduction, components and events, an example GUI, the root component, adding a button, entry widgets, text widgets, check buttons	9	2
21.	**Python SQL Database Access:** Introduction, Database Installation, Connection, Creating a Database Table, INSERT, READ, UPDATE, DELETE operations, Commit & Rollback operations, Error Handling	9	2
22.	**Working with Libraries** • Using standard libraries (math, datetime, random) • Introduction to NumPy and Pandas (basics) • Plotting with matplotlib (optional)	9	2
23.	**Mini Projects and Applications** • Small real-world projects (e.g., calculator, to-do app, file manager) • Data processing or analysis project using Pandas • Final lab report and viva	12	2

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	Evaluate complex data structures like conditional loops, lists, sets, dictionaries, and tuples as well as classes to store collections of related data.
CLO2	Create Python's tools and techniques for problem-solving and creating applications in practical fields.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO1	PLO2	PLO3	PLO4
CLO1			3	
CLO2		3		

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion, Lab Practice	Lab Performance, Lab Report/Project., Lab Work
CLO2	Lecture, Discussion, Lab Practice	Lab Performance, Lab Report/Project., Lab Work

ASSESSMENT PATTERN
CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	Lab Report 1 (15)	Lab Report 2 (15)
Remember	5			
Understand		5	5	5
Apply			10	10

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	
Understand	
Apply	
Analyze	
Evaluate	30
Create	30

LEARNING MATERIALS

1) Recommended Reading:

Introduction to Programming Using Python, David I. Schneider, 1st Edition (2015), Pearson Publication

2) Supplementary Readings:

Introduction to Programming Using Python, Y. Daniel Liang**,** Latest Edition, Pearson Publication

Course Code: MIS 3201
Course Title: **Database Management Systems**
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE

Database systems evolved through several technological stages up to today's distributed systems connected and accessible through the Internet. This course explores fundamentals of database systems by focusing on relational database technology. It enables students to analyze connections between data and business, look analytically at organizational data, understand software for creating and managing database systems (database management systems – DBMS), learn techniques for storing and retrieving data, and to develop simple database systems.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1	**Introduction to Database System Concepts:** file organization term and concepts, the data hierarchy, concept database and database management system (DBMS), goals/purposes of DBMS, database system applications,	4	CLO 1
2	**Introduction to Database System Concepts:** database management software, database systems vs file systems (why DBMS), view of data, data models, database normalization, multidimensional databases, database users, database designers, database system structure, components of DBMS, database languages.	6	CLO1
3	**Data and Database Administration:** concept of data and database administration, data administration vs. database administration, scope of data administration, need for data administration, difficulties of data administration.	4	CLO 2
4	**Data and Database Administration:** advantages of data administration and database administration, responsibilities of data administration and database administration, functions of the database administrator, concept of metadata, concept data	4	CLO2

	warehousing, data mining, and data mart, system administration, emerging internet technology relevant to database processing		
5	**Database performance**: how to optimize database queries, An explanation of indexing and how to use it to improve performance, An explanation of caching and how to use it to improve performance	5	CLO 3
6	**Database Security:** A guide to database security, An explanation of database transactions and how they work, An explanation of database concurrency and how to handle it, An overview of distributed databases	5	CLO 3

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	Understand the basic concepts and applications of database systems and learn the role of databases and database applications in contemporary organizations.
CLO2	Apply the knowledge of how a relational database system functions and how they store and represent data.
CLO3	Analyze organizational information requirements using the entity-relationship approach and model them as Entity-Relationship Diagrams (conceptual database design) and map an Entity-Relationship Diagram to a relational database (logical database design).

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO 1	PLO 2	PLO 3	PLO 4
CLO1	2			
CLO2		3		
CLO3			3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion	Quiz, Question & Answer
CLO2	Lecture, Discussion	Question & Answer

CLO3	Lecture, Discussion	Quiz, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Assignment/Presentation/Class test (05)**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	5			
Understand		5	5	5
Apply			5	5
Analyze			5	5

SEE – Semester End Examination [60 marks]

Bloom Criteria	**Score for the Test**
Remember	
Understand	20
Apply	20
Analyze	20

LEARNING MATERIALS

Recommended Reading:

Database System Concepts by Avi Silberschatz, Henry F. Korth, and S. Sudarshan; 5th Edition (or Latest Edition) McGraw-Hill.

Supplementary Readings:

Business Database Systems by Connolly, Begg and Holowczak, Publisher: Addison-Wesley; Latest Edition.

Course Code: MIS 3202
Course Title: **Database Management Systems Lab**
Credit Hours: **01**
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE

The **Database Management Systems (DBMS) Lab** course provides students with practical experience in designing, implementing, and managing databases using SQL and database tools. It helps learners understand how to create tables, write queries, enforce constraints, and manipulate data efficiently. Through hands-on practice, students learn database normalization, relationships, indexing, and transaction control. The lab reinforces theoretical concepts and builds essential skills for handling real-world data in various applications. It prepares students for roles in data management, software development, and information systems by giving them a strong foundation in database operations and problem-solving.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1	**Lab:** **Introduction to the Relational Model:** Concept of Relational Model, Characteristics, Structure of Relational Databases, Rules for RDBMS, DBMS vs RDBMS, Database Schema & instance, Relational Query Languages, schema diagrams, Relational Operations	8	CLO 1
2	**Lab:** **Introduction to E-R Model:** entity-relationship model, attributes, domain, attribute types, relationship set, descriptive attribute, degree of relationship set, constraints, keys, weak entity sets and strong entity sets, E-R diagram, design issues, tabular representation of weak, strong entity and relationship sets, extended E-R Features	8	CLO 1
3	**Lab:** **Database Management System by Microsoft Access:** what is microsoft access, components of MS access, important terms and basic objects, microsoft access data types, differences between access and excel, advantages and disadvantages of MS access, how to start microsoft access, developing simple applications in database management using MS access	8	CLO 2
4	**Lab:** **Introduction to SQL (Basic & Advanced):** Concept of SQL, Categories of SQL, SQL Statement, Creation of Table, Data insertion, Basic Structure, Retrieving Data Using the SQL SELECT Statement and Restricting and Sorting Data, Using Single-Row Functions to Customize Output and Using Conversion Functions and Conditional Expression.	10	CLO 3
5	**Lab:** **Introduction to SQL (Basic & Advanced):** Reporting Aggregated Data Using the Group Functions and Displaying Data from Multiple Tables, Subqueries to Solve Queries and Using the Set Operations, Manipulating Data and Using DDL	8	CLO 3

	Statements to Create and Manage Tables		

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	Analyze organizational information requirements using the entity-relationship approach and model them as Entity-Relationship Diagrams (conceptual database design) and map an Entity-Relationship Diagram to a relational database (logical database design).
CLO2	Evaluate a database management system using MS Access and the need for both database administration and data administration, performance and security
CLO3	Create a database with the ORACLE Database Management System and process complex information using the SQL language.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO 1	PLO 2	PLO 3	PLO 4
CLO1	2			
CLO2		3		
CLO3			3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion	Lab Performance, Lab Report/Project., Lab Work
CLO2	Lecture, Discussion	Lab Performance, Lab Report/Project., Lab Work
CLO3	Lecture, Discussion	Lab Performance, Lab Report/Project., Lab Work

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	Lab Report 1 (15)	Lab Report 2 (15)
Remember	5			
Understand		5	5	5
Apply			10	10

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	
Understand	
Apply	
Analyze	20
Evaluate	20
Create	20

LEARNING MATERIALS

Recommended Reading:

Database System Concepts by Avi Silberschatz, Henry F. Korth, and S. Sudarshan; 5th Edition (or Latest Edition) McGraw-Hill.

Supplementary Readings:

Business Database Systems by Connolly, Begg and Holowczak, Publisher: Addison-Wesley; Latest Edition.

Course Code: MIS 3203
Course Title: Management Accounting
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

This course explores key elements of managerial accounting as they relate to organizational planning and decision-making. It places special emphasis on the technical, conceptual, behavioral, and cognitive dimensions involved in the processes of managerial planning, decision-making, and control.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Introduction to Management Accounting:** Definition, Scope, Functions, Objectives, and Role of Management Accounting; Financial Accounting vs Management Accounting; Cost accounting vs. Management Accounting; The Management Accountant: The Controller Function, The Treasurer Function; Strategic Decisions and the Management Accountant; Management Accounting in Service and Non-profit Organizations; Changing Business Environment (JIT, TQM, TOC, Process Reengineering, Automation etc.); The Management Accounting Profession; Code of Conduct for Management Accountants.	3	CLO 1
2	**Cost Terms, Concepts And Cost Classification:** General cost classifications-Manufacturing and Non-manufacturing costs, Direct material, direct labor, Manufacturing overhead, Period cost, Product cost, Prime Cost and Conversion Cost, Cost classification on financial statements- Schedule of Cost of Goods Manufactured, Schedule of Cost of Goods Sold, and Income Statement, Inventoriable Costs, Cost Classifications for Predicting Cost Behavior-Variable Cost, Fixed Cost, Cost Classifications for Assigning Costs to Cost Objects-Direct Cost, Indirect Cost, Cost Classifications for Decision Making-Differential Cost and Revenue, Opportunity Cost, Sunk Cost.	6	CLO 2 and CLO 3
3	**Cost Behavior Analysis:** Types of Cost Behavior Patterns; Variable Costs-True Variable versus Step-Variable costs; Fixed Costs- Committed Fixed Costs, Discretionary Fixed Costs; Fixed Costs and the Relevant Range; Mixed Costs; The Analysis of Mixed Costs; Measurement of Cost Behavior; Methods of Segregating Costs (High-Low Method, Least Square Regression Method and Scatter diagram); The Contribution Format Income Statement.	6	CLO 2, CLO 3
4	**Cost-Volume-Profit Analysis:** Uses of Cost-Volume-Profit (CVP) Analysis; Break-Even Analysis-Equation approach and contribution approach. Break-even Point and Shutdown Point; Graphical Approach of CVP Analysis; Margin of Safety, Degree of Operating Leverage (DOL); Assumptions and Limitations of CVP Analysis; Accounting View vs. Economics View of BEP.	7	CLO 3
5	**Absorption and Variable Costing:** Variable Costing and Absorption Costing Income Statements; Reconciliation of Absorption Costing Income with Variable Costing Income; Advantages and Disadvantages	6	CLO 1

SN	CONTENTS	HOURS	CLOs
	of Absorption Costing and Variable Costing; Variable Costing and the Theory of Constraints; Impact of JIT Inventory Methods.		
6	**Budgeting For Planning and Control:** Definition of Budget, Forecast and Budgeting; Advantages of Budgeting, Budget Committee, Budgeting process; Types of Budgets and their Interrelationship; Zero-based budgeting; Master Budget; Sales budget, Production budget, Direct material budget, Direct labor budget, Manufacturing overhead budget, selling and administrative budget, Cash budget, Budgeted income statement, Budgeted balance sheet.	7	CLO 4
7	**Relevant Costing:** The Concept of Relevance, Relevant Cost and Sunk Cost; Identifying Relevant Costs and Benefits; Using Relevant Cost Information in Decision Making; Make, Lease or Buy Decisions; Limiting Factor Analysis; Addition or Deletion of Products, Departments or Segments; Special Sales Orders; Sell or Process Further Decision; Activity-Based Costing and Relevant Costs.	7	CLO 4

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Understand** the basics of management accounting; cost terms, concepts, and classifications; cost behavior; cost volume profit relationship; absorption and variable costing; budgeting for planning and control; and relevant costing.
CLO 2	**Apply** the understanding of cost terms, concepts, and classifications; cost behavior; cost volume profit relationship; absorption and variable costing; budgeting for planning and control; and relevant costing in preparing management reports.
CLO 3	**Analyze** the comprehension of cost terms, concepts, and classifications; cost behavior; cost volume profit relationship; absorption and variable costing; budgeting for planning and control; and relevant costing in managerial decision making.
CLO 4	**Evaluate** the understanding of cost terms, concepts, and classifications; cost behavior; cost volume profit relationship; absorption and variable costing; budgeting for planning and control; and relevant costing in managerial decision making.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	2			

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 2		2		
CLO 3			2	
CLO 4			2	

Mapping Course Learning Outcomes (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Problem-based Case Study	Assignment, Quiz, Question & Answer, Group work
CLO 2	Lecture, Discussion, Problem-based Exercise	Assignment, Quiz, Question & Answer, Math problem solved and Group presentation.
CLO 3	Lecture, Discussion, Problem-based Exercise	Assignment, Quiz, Question & Answer, Exams.
CLO 4	Lecture, Discussion, Problem-based Exercise	Assignment, Quiz, Question & Answer, Exams.

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/ Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05		02	
Understand		02	03	05
Apply			05	05
Analyze		03	05	05

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	10
Understand	10
Apply	20
Analyze	10

Bloom Criteria	Score for the Test
Evaluate	10

LEARNING MATERIALS:

Recommended Reading:

Managerial Accounting by Garrison, Noreen & Brewer, Latest edition - (McGraw-Hill)

Supplementary Readings:

- Introduction to Management Accounting, Latest edition - Charles T. Horngren and Gary L. Sundem,
- Management Accounting, Latest edition - S. Kaplan and S. M. Young

Course Code: MIS 3204
Course Title: Management Science
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

The Management Science course provides students with essential analytical and quantitative tools to support effective decision-making in business. By applying methods such as linear programming, decision analysis, and forecasting, students learn to solve real-world problems in areas like resource allocation, operations, and risk management. This course develops critical thinking, problem-solving skills, and proficiency in decision-support tools, preparing students to make data-driven decisions in dynamic organizational settings.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	***Introduction to Management Science*** Definition and scope of Management Science, role in decision-making, overview of quantitative methods in management, history and evolution of Management Science in business contexts, importance of data-driven decision-making in modern organizations, key principles of operations research and systems thinking, overview of interdisciplinary approaches in Management Science	6	CLO 1
2	***Problem-Solving and Decision-Making Process***	6	CLO 1

SN	CONTENTS	HOURS	CLOs
	Structured problem-solving techniques, decision-making under certainty, uncertainty, and risk, tools for decision support, steps in the decision-making process: identifying the problem, gathering data, generating alternatives, evaluating alternatives, and implementing decisions, types of decisions: strategic, tactical, and operational, models of decision-making: rational, bounded rationality, and intuitive decision-making, decision trees, payoff tables, and risk analysis		
3	***Linear Programming*** Formulation of linear programming problems, graphical solution method, Simplex method and duality theory, applications in resource allocation, production planning, and logistics, assumptions and limitations of linear programming, identifying decision variables, constraints, and objective functions, sensitivity analysis in linear programming: how changes in parameters affect the solution, practical applications in industries like manufacturing, transportation, and finance	6	CLO 1
4	***Forecasting Techniques*** Time series analysis and moving averages, exponential smoothing, regression analysis for forecasting, components of time series data: trend, seasonality, and randomness, methods for smoothing and trend detection in time series, application of moving averages and exponential smoothing for short-term forecasting, regression analysis: simple and multiple regression for long-term forecasting, forecast accuracy measures: MAD, MSE, and MAPE	6	CLO 3
5	***Network Models*** Transportation and assignment problems, shortest path and maximum flow models, project management with PERT/CPM, network flow problems and their applications in logistics and supply chain management, solving the transportation problem using the MODI method, application of assignment models in resource allocation and workforce management, Critical Path Method (CPM) and Program Evaluation and Review Technique (PERT) in project management, network optimization and its role in project scheduling	6	CLO 2
6	***Inventory Management and Queuing Theory*** Economic Order Quantity (EOQ) model, inventory control models, queuing theory and applications in service systems, EOQ model: assumptions, formula, and its application in inventory management, reorder point models and safety stock determination, advanced inventory	6	CLO 2

SN	CONTENTS	HOURS	CLOs
	models: just-in-time (JIT), ABC analysis, and material requirements planning (MRP), basics of queuing theory: M/M/1, M/M/c systems, and their application in service industries, analyzing waiting lines and optimizing customer service operations		
7	***Game Theory and Strategic Decision-Making*** Introduction to game theory, Nash equilibrium and competitive strategies, applications in competitive business environments, basic concepts of game theory: players, strategies, payoffs, and outcomes, types of games: cooperative vs non-cooperative, zero-sum vs non-zero-sum, finding Nash equilibrium and its implications in business competition, applications of game theory in pricing strategies, competitive marketing, and international trade	6	CLO 4

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Understand** quantitative analysis techniques such as linear programming, integer programming, and simulation modeling to solve real-world business problems, optimizing resource allocation, production, and logistics.
CLO 2	**Apply** proficiency in management science software tools (e.g., Excel Solver, LINDO, GAMS) for modeling, optimization, and data analysis, enabling effective implementation of management science techniques in business decision-making.
CLO 3	**Analyze** forecasting methods such as time series analysis, exponential smoothing, and regression to predict trends, demand, and future outcomes, enhancing planning and decision-making processes in business environments.
CLO 4	**Evaluate** and interpret complex decision-making scenarios using tools such as decision trees, sensitivity analysis, and multi-criteria decision-making methods to support strategic and operational decisions in various organizational contexts.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1				3
CLO 2		3		
CLO 3		2		

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 4				3

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion	Quiz, Question & Answer
CLO 2	Lecture, Discussion, Problem based Exercise	Lab, Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise	Quiz, Lab, Question & Answer
CLO 4	Lecture, Discussion, Problem based Exercise	Lab, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	5			
Understand			5	5
Apply		5	5	5
Analyze			5	5

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	00
Understand	15
Apply	15
Analyze	15
Evaluate	15

LEARNING MATERIALS

Recommended Reading:

- Turban and Meredith, Fundamentals of Management Science. Boston: McGraw-Hill, USA.

- Anderson, D.R., Sweeney, D.J, and Williams, T. A, An Introduction to Management Science. West Publishing Company, USA.
- Hesse, R., Management Spreadsheet Modeling and Analysis. Boston: McGraw-Hill, USA.

Course Code: MIS 3205; Course Title Organizational Behavior
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE

This course is designed to give insight into how employees behave and perform in the workplace. It helps us to develop an understanding of the aspects that can motivate employees, increase their performance, and help organizations establish a strong and trusting relationship with their employees. The study of Organizational behavior helps the managers to understand the basis of motivation and what they should do to motivate his subordinates. In this course, the students will learn about different models, leadership, group work and other relevant aspects of organizational behavior.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1	**(What is Organizational Behavior?)**: What is Management, Functions of Management, Management Roles, and Management Skills, What is an Organization? What is Behavior? What is Organizational Behavior? Goals of Organizational Behavior, Forces of Organizational Behavior, Models of Organizational Behavior, and Complementing Disciplines to the Organizational Behavior field Challenges and opportunities for Organizational Behavior.	6	1, 2, & 3
2	**Diversity in the Organizations**: What is Diversity, Levels of Diversity, What are Biographical Characteristics? What is Ability? Types of Abilities, Dimensions of intellectual abilities, Nine basic physical abilities, Intellectual Ability relevance to Organizational Behavior, Implementing Diversity Management Strategies.	3	1, 2, & 3
3	**Attitudes and Job Satisfaction:** What is Attitudes? Components of attitudes, What are the major Job Attitudes? What is Job satisfaction? The impact of satisfied and dissatisfied employees in the workplace.	3	1, 2, & 3
4	**Personality and Values:** What is Personality? Determinants of personality, Traits of personality, Major Personality Attributes influencing OB, Values, Types of Values, Generational values.	3	1, 2, & 3
5	**Perception and Individual Decision Making:** What is Perception? Factors influencing perception, person perception, Shortcuts in judging others, The link between perception and individual decision making, decision making in the organizations, Common biases and errors in decision making, Rational decision making, Ethical decision making.	3	1, 2, & 3
6	**Motivation Concepts:** What is motivation? Nature of motivation, Motivation process, Classical theories of motivation, Contemporary theories of motivation both content and context based, Integrating contemporary theories of motivation, The job characteristic model, Alternative work arrangement, Motivating employees through intrinsic and extrinsic rewards.	6	1, 2, & 3
7	**Foundations of Group Behavior:** Defining and classifying group, Stages of Group development, Group properties, Group decision making.	3	1, 2, & 3
8	**Understanding Work Teams:** Definition of Team, Types of team, Differences between group and team, Types of teams, Creating effective teams,	3	1, 2, &

	High performance teams, Turning individuals into team players.		3
9	**Leadership and influences process:** Leadership, Theories of leadership, Positive leadership styles and relationships, The (Un) ethical aspects of leadership, leadership and trust, Challenges and opportunities to Our understanding of leadership.	3	1, 2, & 3
10	**Power and Politics:** Power and leadership, Bases of power, Dependency, Power tactics, Power in groups, Politics, Contributing factors to political behavior, Response to political behavior, Defensive behavior, Impression management.	3	1, 2, & 3
11	**Conflict and Negotiation:** Definition of Conflict, Process of conflict, Types of Conflict, Conflict Strategies. Negotiation, Negotiation process, Bargaining strategies.	3	1, 2, & 3
12	**Organizational Culture and Change:** Definition and types of culture, How employees learn culture, Creating and Sustaining Culture, What do cultures do? Developing an ethical culture, Change and nature of change, Approaches to managing organizational change, Organizational Development.	3	1, 2, & 3

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	**Remember and Understand** the basics of organizational behavior concepts, foundation of individual and group decision making through diversity, attitudes, perception and motivation, leadership techniques, power and politics, conflicts and negotiation as well as organizational culture and change.
CLO2	**Apply and Analyze** the knowledge of organizational behavior concepts, foundation of individual and group decision making through diversity, attitudes, perception and motivation, leadership techniques, power and politics, conflicts and negotiation as well as organizational culture and change.
CLO3	**Evaluate and Create** the knowledge of organizational behavior concepts, foundation of individual and group decision making through diversity, attitudes, perception and motivation, leadership techniques, power and politics, conflicts and negotiation as well as organizational culture and change.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1(weak)-3(strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1	2			
CLO 2			2	
CLO 3				1

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	**Teaching-Learning Strategy**	**Assessment Strategy**
CLO1	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO2	Lecture, Discussion, Problem based Exercise	Assignment, Quiz, Question & Answer

CLO3	Lecture, Discussion, Problem based Exercise	Presentation, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Assignment/Presentation/Class test (05)**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	5		5	
Understand		5	5	
Apply			5	5
Analyze				5
Evaluate				5

SEE – Semester End Examination [60 marks]

Bloom Criteria	**Score for the Test**
Remember	10
Understand	10
Apply	10
Analyze	10
Evaluate	10
Create	10

LEARNING MATERIALS

a) Stephen P. Robbins and Timothy A. Judge, Organizational Behavior (Latest Edition)

Reference Books and Materials:

a) John W- Newstrom and Keith Devis--- Organizational Behavior, Latest Edition (Irwin Mcgraw-Hill, Inc)

Course Code: MIS 3206
Course Title: Data Communication and Networking
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

The "Data Communication and Networking" course is essential for understanding how data is transmitted and managed across networks, which forms the foundation of modern digital communication. It equips students with knowledge of network models, protocols, and architectures, enabling them to design, analyze, and troubleshoot network systems. As the demand for secure and efficient communication grows across industries, this course prepares learners to meet real-world challenges in IT and communication fields. Mastery of networking concepts is crucial for careers in cybersecurity, software development, and system administration, making this course a vital component of a comprehensive computer science or IT curriculum.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1.	**Introduction to Elements of Data Communication and Networking:** Define data communication, characteristics, components, data transmission modes, network definition and types, history of communications and historical evolution of corporate network, network structure, network linking devices and network topology.	3	CLO 1
2.	**Layered Architecture of Network:** Protocol (Syntax, semantics, timing), Standard (de facto and de jure), OSI model with layers, layered task, functionalities of each layer, TCP/IP model with layers.	3	CLO 1
3.	**Data, Signal, Analog and Digital Transmission:** Basic concepts of signal, analog and digital signals and their properties, transmission impairment, data rate limit calculation, digital-to-digital conversion, line coding, block coding, and scrambling, digital to analog, analog to analog, analog to digital conversion, modulation techniques.	3	CLO 2
4.	**Telephone Network and Cable TV Network Components and Transmission Media:** Major components of the telephone network, dial-up modems, and modem standards, brief idea of DSL, and cable TV networks for data transfer: downstream and upstream data bands, downstream and upstream sharing, guided and unguided medium-twisted pair, coaxial and fiber optic cable, radio and microwaves, wireless media.	3	CLO 3
5.	**Multiplexing and Speed Spectrum:** Concept of multiplexing, frequency division multiplexing (FDM) and its applications, wavelength division multiplexing (WDM) and its applications, time division multiplexing (TDM) and its applications, data rate management, frequency hopping speed spectrum, and direct sequence speed spectrum	3	CLO 4
6.	**Error Detection and Correction:** Concept of errors and types of errors, concept of redundancy, introduces the concept of hamming distance, CRC	3	CLO 4

SN	CONTENTS	HOURS	CLOs
	and how it can be implemented in hardware, representation of CRC as polynomials, introduction of checksum (traditional and complementary), discussion about error corrections.		
7.	**Internet Based Applications:** Concept of internet, how the internet works; internet access technologies; IPv4 vs IPv6, internet implications for business management, understand intranet, extranet; Understand cookies, WWW, HTTP, and VPN; know the details of internet services including email, FTP, Telnet, VoIP, streaming audio and video, IM, tweets, and blogs.	3	CLO 2
8.	**Fundamentals of Telecommunications:** Concepts of GPRS, CDMA, GSM, and LTE etc.; know the details of 1G, 2G, 3G, 4G and 5G services; WiMAX, Bluetooth, Wi-Fi, Li-Fi, satellite networks.	3	CLO 3
9.	**Network Security and Management:** Understand network management system, performance management, and security management; understand simple network management protocol concept and components; define and categorize cryptography; understand details of security services and digital signature; know details of entity authentication and firewalls	3	CLO 4
10	**LAB Practice:** Work using CISCO Packet Tracer; Introduction with networking devices, Configuring P2P network using Cisco Packet Tracer, Different topology configuration with multiple networks using basic routing command in CISCO Packet Tracer, Configure static routing protocol using CISCO Packet Tracer, Solve problems using CISCO Packet Tracer for the lab assessment test	15	CLO 4

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Understand** the elements of data communication and different network topology and the functionality of each protocol layer of two network models: OSI and TCP/IP.
CLO 2	**Apply** the knowledge of signal, bit, performance measurements, different signal conversion techniques and internet based applications
CLO 3	**Analyze** the major components of telephone and cable networks and different transmission media based on their physical properties and telecommunication fundamentals in data transmission.
CLO 4	**Evaluate** the working principle of multiplexing and various error detection, correction processes like block coding, CRC, and checksum and security management of overall communication

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	2			
CLO 2		3		
CLO 3			3	
CLO 4		3		

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion	Quiz, Question & Answer
CLO 2	Lecture, Discussion	Quiz, Question & Answer
CLO 3	Lecture, Discussion	Assignment, Question & Answer
CLO 4	Lecture, Discussion, Case Study	Quiz, Presentation, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation /Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	5			
Understand			5	
Apply		5	5	5
Analyze			5	5
Evaluate				5

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test

Bloom Criteria	Score for the Test
Remember	0
Understand	15
Apply	15
Analyze	15
Evaluate	15

LEARNING MATERIALS

Recommended Reading:

- Data Communications and Networking by Behrouz A. Forouzan, latest edition, McGraw-Hill Science/Engineering/Mat

Supplementary Readings:

- Business Data Communications and Networking by Jerry FitzGerald, latest edition, Wiley.
- Data Communications and Computer Networks: A Business User's Approach by Curt M. White, latest edition, Cengage Learning.
- Data and Computer Communications by, by William Stallings, latest edition, Pearson Prentice Hall

Course Code: MIS 3207
Course Title: Viva-Voce
Credit: 02
CIE Marks: 0
SEE Marks: 100

Course Code: MIS 4101
Course Title: **Big Data and Machine Learning**
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE

The course "Big Data and Machine Learning" is designed to equip students with the skills to handle, process, and analyze vast volumes of complex data. As data generation grows exponentially across sectors, understanding big data tools becomes essential for extracting meaningful insights. By combining theory with hands-on practice, students learn how to implement scalable machine learning models on large datasets. The course fosters analytical thinking and data-driven problem solving, enabling learners to tackle real-world business and research challenges. It prepares students for careers in data science, AI, finance, healthcare, marketing, and more. Emphasis is placed on ethical data use and responsible AI deployment. Through case studies and projects, students gain experience in turning raw data into actionable knowledge. Overall, the course bridges the gap between data complexity and actionable intelligence in today's digital world.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1	**Introduction to big data**; Relationship to big data and data warehousing; Why big d is a discipline, Examples of research project using big data	6	CLO 1
2	**Introduction to machine learning;** Examples of research project using machine learning; Differences between data mining and machine learning.	6	CLO 2
3	**Discussion on data**: types of data, quality of data, data preprocessing, and similarity and dissimilarity measures, data preprocessing, data normalization.	6	CLO 3
4	**Discussion on data exploration:** exploratory data analysis (EDA), summary statistics, data visualization, and OLAP and multidimensional data analysis.	6	CLO 2
5	**Discussion on cluster analysis**: basics, *K*-means, agglomerative hierarchical clustering, DBSCAN.	9	CLO 3
6	**Discussion on artificial neural networks**: perceptron, multilayer artificial neural network, etc.	9	CLO 4

Course Learning Outcome: By the end of the course, students will be able to:

CLO1	**Understand** basic applications, concepts, and techniques big data and machine learning
CLO2	**Analyse** appropriate big data and machine learning algorithms to solve real world problems
CLO3	**Apply** the knowledge to compare and evaluate different data mining and/or machine learning techniques like Classification, regression, prediction, clustering, association rule mining, and neural network
CLO 4	**Evaluate** the knowledge of artificial intelligence and machine learning in developing research ideas

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO 1	PLO 2	PLO 3	PLO 4
CLO1	2			
CLO2		2		
CLO3			3	
CLO4				3

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	**Teaching-Learning Strategy**	**Assessment Strategy**
CLO1	Lecture, Discussion	Quiz, Question & Answer
CLO2	Lecture, Discussion	Quiz, Question & Answer
CLO3	Lecture, Discussion, Problem Based Exercise	Quiz, Question & Answer
CLO4	Lecture, Discussion	Quiz, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Class Test/ Assignment/ Presentation**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	05			
Understand			05	
Apply		05	05	05
Analyze			05	05
Evaluate				05

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Understand	15
Apply	15
Analyze	15
Evaluate	15

LEARNING MATERIALS

*Machine Learning, Tom M. Mitchell, *McGraw-Hill*, March 1997.

*An Introduction to Statistical Machine Learning, Gareth James, Daniela Witten, Trevor Hastie, Robert Tibshirani

Course Code: MIS 4102
Course Title: **System Analysis and Design**
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE

This course introduces established and evolving methodologies for the analysis, design, and development of an information system. Emphasis is placed on system characteristics, managing projects, prototyping, and systems development life cycle phases. Upon completion, students should be able to analyze a problem and design an appropriate solution using a combination of tools and techniques. The main goal of this course is to provide students with a solid background in information systems analysis and design techniques through a combination of theory and practice. It introduces the vital logical and design considerations addressed during system and application software development.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1	**The Context of System Analysis & Design:** types of information systems, players in the systems game, the systems analyst as a problem-solver, skills needed by the systems analyst, the systems analyst as a facilitator, business drivers and technology drivers for today's information systems, system development process	6	CLO 1

2	**Information System Building Blocks:** federation of information systems, information systems architecture, focus areas for information systems, information system building blocks (knowledge, process, communication)	6	CLO 2
3	**Information Systems Development and System Analysis:** process of system development, CMM process management model, life cycle versus methodology, principles of system development, project phases, model-driven development strategy, computer-assisted software engineering (case), system analysis phases (scope definition, problem analysis, requirement analysis, logical design, decision analysis).	4	CLO 2
4	**Fact-Finding Techniques for Requirements Discovery:** introduction to requirements discovery, results of incorrect requirements, criteria for system requirements, process of requirements discovery, fact-finding ethics, seven fact-finding methods, fact-finding strategy	4	CLO 2
5	**Feasibility Analysis:** feasibility analysis, six tests for feasibility, information system costs & benefits, three popular techniques to assess economic feasibility, return-on-investment analysis (ROI), candidate systems matrix	4	CLO 3
6	**System Design:** systems design concept and approaches, model-driven approaches, rapid application development (RAD), joint application development (JAD)	4	CLO 3

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	Understand different types of Information system, system stakeholders, and drivers, process of system development.
CLO2	Analyze essential models, approaches, phases and building blocks of system analysis & development to explore the techniques and methods for requirements discovery
CLO3	Evaluate different types of feasibility and the design phase tasks in terms of a computer-based solution for an in-house development project.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO 1	PLO 2	PLO 3	PLO 4
CLO1	2			
CLO2			3	

CLO3				2

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion	Quiz, Question & Answer
CLO2	Lecture, Discussion	Quiz, Question & Answer
CLO3	Lecture, Discussion, Problem Based Exercise	Quiz, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	5			
Understand		5	5	5
Apply				
Analyze			5	5
Evaluate			5	5

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Understand	20
Apply	
Analyze	20
Evaluate	20

LEARNING MATERIALS

Recommended Reading:

Jeffrey L. Whitten and Lonnie D. Bentley, "System Analysis and Design Methods", Latest Edition, McGraw Hill Publications

Supplementary Readings:

Essentials of System Analysis and Design by Joseph Valacich, Joey George, and Jeff Hoffer; Latest Edition, Prentice Hall, USA.

System Analysis and Design by E.M. Awad; Latest Edition, Galgoita Publications

Course Code: MIS 4103
Course Title: **System Analysis and Design Lab**
Credit Hour: 01
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE: The main goal of this course is to provide students with a solid background in information systems analysis and design techniques through a combination of theory and practice. It introduces the vital logical and design considerations addressed during system and application software development.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
24.	**Modeling System Requirements with Uses Cases:** introduction to use-case modeling, benefits of use-case modeling, system concepts for use-case modeling, basic use-case symbols, the process of requirements use-case modeling	4	1
25.	**Data Modeling and Analysis:** data modeling, entity relationship diagram (ERD), data modeling concepts, process of logical data modeling	5	1
26.	**Process Modeling:** models: logical and physical, process modeling and data flow diagram (DFD), differences between DFDs and flowcharts, concept of flowcharts, data conservation, data structure, data types and domains	4	1
27.	**System Testing:** Develop a set of test cases for a given system to execute them, emphasize both functional and non-functional testing.	3	2
28.	**Project Management:** Gantt chart or PERT diagram Include tasks, dependencies, and timelines**.**	3	2
29.	**Database Design & System proposal:** files versus database, database concepts, database architecture, relational databases, goals of database design, method for database design, overview of system proposal	2	3

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	Apply the basic concepts of use cases, data analysis and modeling and the process of use case modeling, Data Flow Diagram (DFD), flowcharts and database design
CLO2	Analyze effective test plans, designing test cases, managing defects, and overseeing project initiation, scheduling, resource allocation
CLO3	Create suitable system proposal reports from different organizational scenarios.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO1	PLO2	PLO3	PLO4
CLO1	2			
CLO2			3	
CLO3		3		

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion, Lab Practice	Lab Performance, Lab Report/Project., Lab Work
CLO2	Lecture, Discussion, Lab Practice	Lab Performance, Lab Report/Project., Lab Work
CLO3	Lecture, Discussion, Lab Practice	Lab Performance, Lab Report/Project., Lab Work

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	Lab Report 1 (15)	Lab Report 2 (15)
Remember	5			
Understand		5		
Apply			5	5
Analyze			5	5
Evaluate				
Create			5	5

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test

Apply	20
Analyze	20
Evaluate	
Create	20

LEARNING MATERIALS

Recommended Reading:

Jeffrey L. Whitten and Lonnie D. Bentley, "System Analysis and Design Methods", Latest Edition, McGraw Hill Publications

Supplementary Readings:

- Essentials of System Analysis and Design by Joseph Valacich, Joey George, and Jeff Hoffer; Latest Edition, Prentice Hall, USA.
- System Analysis and Design by E.M. Awad; Latest Edition, Galgoita Publications

Course Code: MIS 4104
Course Title: Project Management and Information System
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

The "Project Management and Information Systems" course aims to equip students with the skills to effectively manage projects within the context of modern information systems. It emphasizes understanding project life cycles, resource allocation, and risk management while integrating IT tools to streamline project execution and communication. The course prepares students to navigate the complexities of managing both the technical and organizational aspects of projects, ensuring they are delivered on time, within scope, and on budget. By combining theoretical knowledge with practical applications, this course enhances decision-making and leadership capabilities in project-driven environments.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Projects in Contemporary Organization:** Definition of a Project, Why Project Management? The Project Life Cycle, Objectives of Project.	4	CLO 1
2	S**trategic Management and Project Selection:** Project Selection & Criteria to choose, Nature of Project Selection Models, Types of Project Selection	4	CLO 1

SN	CONTENTS	HOURS	CLOs
	Models.		
3	**The Project Manager:** Project Management & Project Manager Special Demands for the Project Manager Selecting The Project Manager.	4	CLO 2
4	**Managing Conflict and the Art of Negotiation:** he Nature of Negotiation, Partnering, Chartering & Scope Change, Conflict and Project Life Cycle Types of Conflict, Methods of Resolving Conflict	4	CLO 2
5	**The Project in the Organizational Structure:** Initial Project Coordination, Project Plan & Composite Plan, Work Breakdown Structure Steps for Designing Work Breakdown Structure	3	CLO 3
6	**Project Activity and Risk Planning:** Estimating Costs and risks, Critical Path Method: Crashing a Project, Resource Allocation Problems, Resource Loading, Resource Leveling.	3	CLO 3
7	**Scheduling:** Scheduling, Network Techniques: PERT & CPM Determination of Probability and Project Duration	3	CLO 3
8	**Resource Allocation:** Critical Path Method, Crashing a Project, Resource Allocation Problems, Resource Loading, Resource Leveling	3	CLO 3
9	**Monitoring and Information Systems:** The Planning-Monitoring-Controlling Cycle, Information Needs & Reporting Process, Computerized PMIS.	4	CLO 4
10	**Project Control:** Fundamental Purposes of Control Three Types of Control Processes Designing & Developing Control System	4	CLO 4
11	**Project Auditing:** Basics of project Audit, Project audit evaluation, Measurement and essentials of project evaluation, project audit life cycle.	3	CLO 5
12	**Project Termination:** Varieties of Project Termination When to Terminate Projects Termination Process	3	CLO 5

Course Learning Outcome (CLO): By the end of the course, students will be able to:

CLO 1	**Understand** the basic concepts, perspective, variables, techniques and tools of project and project management
CLO 2	**Analyze** the criteria and analysis of project selection and develop an integrated system to ensure effective strategic management of the project.
CLO 3	**Apply** the qualities of a project manager and assess the role of the project manager in negotiation and conflict resolution.
CLO 4	**Evaluate** and actualize the process of project selection and implementation ensuring the successful accomplishment of each activity, Scheduling, Network Techniques.

CLO 5	**Create** the urge to do the project audit and explain the termination situation for a project.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

CLO/PLO	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1			3	
CLO 2	3			
CLO 3			3	
CLO 4	3			
CLO 5		3		

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO 2	Lecture, Discussion, Problem based Exercise	Assignment, Quiz, Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise, Industry engagement	Report submission and presentation, Question & Answer
CLO 4	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO 5	Lecture, Discussion, Problem based Exercise	Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	5			
Understand			5	
Apply		5	5	
Analyze			5	5

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Evaluate				5
Create				5

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Understand	10
Apply	10
Analyze	15
Evaluate	15
Create	10

LEARNING MATERIALS

Text Book:

Project Management: A Managerial Approach, 9th Edition, International Student Version by Jack R. Meredith, Samuel J. Mantel, Jr.

Reference Book:

Project Management in Practice, 5th Edition by Jack R. Meredith, Samuel J. Mantel, Jr., Scott M. Shafer, Margaret M. Sutton

Course Code: MIS 4105
Course Title: Supply Chain Management
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

This is an introductory course in Supply Chain Management which provides basic understanding of supply chain management. Main topics to be covered in this course are: Definition and overview of supply Chain (SC), Discussion of the main SC drivers including responsiveness vs. efficiency, The

facility location activity, The distribution activity including transportation, The inventory activity, The forecasting and sale activities, Marketing, Sourcing, Procurement and technology, Analysis of some cases studies and use of excel throughout whenever found necessary.

Course Content:

SN	CONTENTS	HOURS	CLOs
1	**Nature of Supply Chain:** Importance of SCM, Supply Chain Process, Inventory management	8	1
2	**Input Suppliers:** supply chain processes, distribution and demand management	6	1
3	**Market Intermediaries:** the role of government agencies, Analyze the issues relevant with supply chain Management	6	2
4	**Retailers:** role of intermediaries, channels of distribution	8	2
5	**Quality and Infrastructure:** importance of quality systems, international standards, distribution centers, transportation networks	8	3 and 4
6	**Information Technology and Finance:** adoption of new technologies, commodity markets and IT, Credit Hoursand institutional structure	6	1, 3 and 4

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Explain** the key concepts, strategies, and processes involved in managing a global supply chain effectively.
CLO 2	**Analyze** the role of supply chain management in creating value and gaining competitive advantage for organizations.
CLO 3	**Apply** supply chain tools and techniques (such as forecasting, inventory management, logistics, and sourcing strategies) to solve real-world business problems.
CLO 4	**Evaluate** and improve supply chain performance through the use of metrics, technology, and sustainable practices.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	3			
CLO 2	3	2	2	
CLO 3			3	
CLO 4		2	3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	**Teaching-Learning Strategy**	**Assessment Strategy**
CLO 1	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO 2	Lecture, Discussion, Problem based Exercise	Assignment, Quiz, Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise	Presentation, Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise	Presentation, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Class Test/ Assignment/ Presentation**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	05			
Understand			05	05
Apply		05	05	05
Analyze			05	05

SEE – Semester End Examination [60 marks]

Bloom Criteria	**Score for the Test**

Bloom Criteria	Score for the Test
Remember	10
Understand	10
Apply	20
Analyze	20

LEARNING MATERIALS

Textbook:

Stanley E. Fawcett,Lisa M. Ellram, Jeffrey A. Ogden, ***'Supply Chain Management: From Vision to Implementation'*** Prentice Hall, USA

Reference Book:

Chopra, Supply chain management, Prentice Hall, USA

Course Code: MIS 4106
Course Title: Business Research
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

The RATIONALE

The "Business Research" course equips students with essential skills to investigate and analyze business problems systematically. It fosters critical thinking, data collection, and analytical techniques to support evidence-based decision-making. By understanding research methodologies, students learn to design and conduct effective studies, interpret results, and apply findings to real-world business challenges. This course lays the foundation for academic inquiry and strategic problem-solving in diverse business contexts.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Introduction to business research:** Different types of research, Research scope, Business Research, Characteristics of good research, quantitative and qualitative research.	3	1

SN	CONTENTS	HOURS	CLOs
2	**The research problem and design:** Define the researchable problem, Identify problem sources, Characteristics of the researchable problem, Problem identifying process, literature review, research gap, research philosophy, and research design.	6	1
3	**Variables and sampling:** Define a variable, and types of variables. Sampling: Why Sample? Define population, census, survey, Stages of sampling, The sampling Frame, Probability and non-probability sampling, Determination of sample Size, Sampling technique- Sampling error	6	2
4	**Measurement and scaling techniques:** Different types of levels of measurement scale, convert qualitative data to quantitative data., Discuss different types of attitude measurement, Give an example of some common usage measurement scale, Rules of measurement- Types of measurement scale- Three criteria of good types of primary and measurement – i) Reliability ii) Validity iii) Sensibility Rating the scale-Types of the rating scale, Attitude scale, Technique for measuring attitude- Different type of attitude scale.	6	2
5	**Questionnaire design:** Definition and relevancy of a questionnaire, Questionnaire accuracy, Wording questions, Types of questions, Guidelines for constructing questions, Best question sequence, Questionnaire pretesting, and layout. The Art of Asking Questions.	3	2
6	**Method of data collection, processing, and presentation:** Data source. Primary and secondary data, Methods of collecting primary data, Sources of secondary data, Evaluation of secondary data. Observation method, Interview schedule, Brief description of Survey, and observation method. Stages of data analysis, Editing, Coding, Basics of classification of Data, Presentation of data, Tabulation, the Computer program for analysis, Analysis of data: Basic Data Analysis i) Descriptive analysis ii) Inferential Analysis- Hypothesis tests.	6	3
7	**Hypothesis Development and Testing:** Hypothesis, Characteristics of Hypothesis, Types of Hypothesis, Null Hypothesis and Alternative Hypothesis, The Level of Significance, Test of Hypothesis or Decision Rule, Power of hypothesis test, Type I And Type II Errors Development of hypothesis Z-test and T-test, one sample, two samples, and proportion.	3	3
8	**Business Case study:** Are in Accounting, Finance, Management, and Marketing	3	4
9	**Interpretation and writing research report:** What is a report?	3	4

SN	CONTENTS	HOURS	CLOs
	Characteristics of a good research report, Report format, Precautions to prepare the report, and Effective use of graphic aids. Referencing: In case of a Book- in Case of an Article-common Abbreviation used in Foot Notes and Bibliography. Bibliography versus Footnote.		
10	**Practical Application of SPSS and Smart PLS:** Basic knowledge of the SPSS and PLS, Data entry, descriptive statistics- Mean, median, Maximum, Minimum, Standard deviation, frequency distribution, Inferential statistics- Correlation, Regression Analysis, Hypothesis testing, T-test, Z-test, F-test, chi-square test, Graphical presentation, explain table and graph with text.	3	3

Course Learning Outcome (CLO): By the end of the course, students will be able to:

CLO 1	**Understand** various kinds of research, research processes, and research designs; generate ideas; identify core research problem(s) based on the scope and objectives of the study, and/or relate the problem(s) and major theories linked to the research framework and objectives.
CLO 2	**Apply** the Concept of variables, Sampling Terminology, and population, and determine sample size based on sampling techniques, questionnaires based on the measurement and scaling techniques
CLO 3	**Analyze** business problems using data collection methods, process, presentation, and data analysis, including descriptive & inferential statistics also hypothesis testing.
CLO 4	**Evaluate** business research case studies as well as create independent thought for critically analyzed research proposals and report writing.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	2			
CLO 2			3	
CLO 3				3
CLO 4				3

Mapping Course Learning Outcomes (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Problem-based Exercise	Question & Answer

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 2	Lecture, Discussion, Problem-based Exercise	Quiz, Question & Answer
CLO 3	Lecture, Discussion, Problem-based Exercise	Presentation, Assignment
CLO 4	Discussion, Practical Exercise in Lab	Group work and assignment

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	5			
Understand			5	
Apply			5	5
Analyze			5	5
Evaluate		5		5

SEE – Semester End Examination [60 marks]

Bloom Criteria	The score for the Test
Remember	
Understand	15
Apply	15
Analyze	15
Evaluate	15

LEARNING MATERIALS

Recommended Reading:

Research Methodology -A Step by Step by By Ranjit Kumar (4th Edition)

Supplementary Readings:

1. Research methodology: methods and techniques by C R Kothari; Gaurav Garg (3rd Edition)

2. Research Methods for Business Students by Mark Saunders. Philip Lewis. Adrian (Seventh Edition**)**

Course Code: MIS 4107
Course Title: Industry Exploration Program
Credit Hours: 02
CIE Marks: 70
SEE Marks: 30

Course Code: MIS 4201
Course Title: Simulation and System Modeling
Credit Hours: 03
CIE Marks: 40

SEE Marks: 60

RATIONALE

This course has been designed for the students to present a simplified abstraction of the essential elements of a situation, make explicit the essential relations and fundamental interactions in a situation, move the time variable ahead at an accelerated speed so that the implications arising from action taken in a dynamic situation may be clearly experienced, place the participant in a pressure situation, so that he feels the direct impact of decision-making and offer an opportunity to participate in the teaching-learning process based on a self-teaching approach.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Basic simulation Modeling:** Definition of system, model, and simulation, types of systems: continuous and discrete, model development life cycle, advantages and limitations of simulation, applications of simulation in various fields, phases in simulation study	3	1 and 2
2	**Verification and variance:** Difference between verification and validation, Calibration of models, Techniques for verifying and validating simulation models	3	1, 2 & 3
3	**Analysis of Simulation Output:** Estimation methods for simulation results, Simulation run statistics, Replication of runs to ensure reliability, Elimination of initial bias in simulations.	3	1, 2 & 3
4	**Simulation Software:** Overview of simulation software tools, Introduction to Java-based simulation, Use of GPSS (General Purpose Simulation System), Introduction to SSF (Scalable Simulation Framework), Exploring other simulation software options.	3	2
5	**Simulation of Computer Systems:** Simulation tools for computer systems, High-level computer system simulation, CPU and memory simulation techniques.	4	1, 2 & 3
6	**Output Data Analysis for a Single System:** Types of Simulations, Simulates a system over a long time to observe long-term behavior, Output Performance Measure, Initialization Bias, Statistical Techniques for Analysis, Variance Reduction Techniques *(optional/advanced)*, Replication vs. Single Run	6	1, 2 & 3
7	**Random Number Generators:** Properties of random numbers, Methods for generating pseudo-random number, Tests for randomness, Generating discrete distributions, Techniques: Inversion, rejection, composition, and convolution.	6	1,2 & 3

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	Understand different modelling terms by analyzing the system or the data that is present

CLO 2	Implement the model and from the results check for the correctness of the assumptions
CLO 3	Analyse the outcomes and make predictions.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / **CLOs**	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1	3			
CLO 2			3	
CLO 3		2	3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	**Teaching-Learning Strategy**	**Assessment Strategy**
CLO 1	Lecture, Discussion, Problem based Exercise	Question & Answer (theory)
CLO 2	Lecture, Discussion, Problem based Exercise, industry engagement	Question & Answer (theory), Report submission and presentation
CLO 3	Lecture, Discussion, Problem based Exercise, industry engagement	Question & Answer (theory), Report submission and presentation

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Class Test/ Assignment/ Presentation (05)**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	05			
Understand			05	05
Apply		05	05	05
Analyze			05	05

Bloom's Criteria	**Attendance (05)**	**Class Test/ Assignment/ Presentation (05)**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Evaluate				
Create				

SEE – Semester End Examination [60 marks]

Bloom Criteria	**Score for the Test**
Remember	10
Understand	10
Apply	20
Analyze	20

LEARNING MATERIALS

Text Books:

Law, A. and Kelton, D.M., ***Simulation Modeling and Analysis***. McGraw-Hill, USA

Supplementary Readings:

Pegden, D, Sasoeski, R.P. and Shannon, R. E., ***Introduction to Simulation using SIMAN.*** McGraw-Hill, USA

Course Code: MIS 4202
Course Title: Simulation and System Modeling Lab

Credit Hour: 01
CIE Marks: 40
SEE Marks: 60

RATIONALE

This lab course provides students with hands-on experience in modeling and simulating real-world systems. It helps learners understand system behavior, analyze performance, and make data-driven decisions without real-world experimentation. The course enhances skills in system design, validation, and optimization, supporting better problem-solving and decision-making. By simulating complex systems in fields like engineering, business, and healthcare, students gain practical knowledge essential for careers in systems analysis and operations management.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Introduction to Simulation Tools:** Introduction to tools (MATLAB, Simulink, Arena, or AnyLogic), Interface, features, and basic commands, Creating and running a simple simulation model	2	
2	**Generating Random Variants:** Importance of random variates i. n simulation, Overview of probability distributions commonly used in simulations, Uniform Random Number Generation, Inverse Transform Method, Acceptance-Rejection Method, Special Techniques for Specific Distributions, Generating Correlated Random Variates	3	1, 2 & 3
3	**Statistical Techniques for Comparing Alternative Systems:** Comparison of Two Systems, Common Random Numbers (CRN), Comparison of More than Two Systems, Ranking and Selection Methods**.**	3	1, 2 & 3
4	**Variance Reduction Technique:** antithetic variates, control variates, stratified sampling, importance sampling, moment matching	3	2 & 3
5	**Experimental Design and Optimization:** Fundamentals of Experimental Design, Types of Designs, Response Surface Methodology (RSM), Taguchi Methods (Robust Design), Simulation Optimization Techniques	5	2 & 3
6	**Simulation of Manufacturing Systems:** Introduction to Manufacturing Systems, Modeling Techniques to Simulate, Performance Metrics, Data Collection and Input Modeling, Simulation Software and Tools, Experimentation and Optimization, Advanced Topics (Optional)	5	2 & 3

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Understand simulation tools** (e.g., MATLAB, Simulink, Arena) to model and analyze real-world systems in engineering, business, or operations contexts.
CLO 2	**Analyze simulation models** to study system behavior, identify performance issues, and support decision-making under uncertainty.
CLO 3	**Evaluate simulation results** using statistical analysis and visual representations to provide actionable insights.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLOs from 1 (weak) - 3 (strong) correlation]

PLOs / CLOs	PLO 1	PLO 2	PLO 3	PLO 4
CLO 1	2			
CLO 2			3	
CLO 3				3

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO 1	Lecture, Discussion, Problem based Exercise	Lab Performance, Lab Report/Project., Lab Work
CLO 2	Lecture, Discussion, Problem based Exercise, industry engagement	Lab Performance, Lab Report/Project., Lab Work
CLO 3	Lecture, Discussion, Problem based Exercise, industry engagement	Lab Performance, Lab Report/Project., Lab Work

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	Lab Report 1 (15)	Lab Report 2 (15)
Remember	5			
Understand		5		
Apply			5	5
Analyze			5	5
Evaluate				
Create			5	5

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Understand	20
Apply	00
Analyze	20
Evaluate	20

LEARNING MATERIALS

Text Books:

Law, A. and Kelton, D.M., ***Simulation Modeling and Analysis***. McGraw-Hill, USA

Supplementary Readings:

Pegden, D, Sasoeski, R.P. and Shannon, R. E., ***Introduction to Simulation using SIMAN.*** McGraw-Hill, USA

Course Code: MIS 4203
Course Title: **Enterprise Resource Planning**
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE: The course is designed to give students a general understanding of ERP systems, particularly their evolution, components, modules, architecture, size, complexity, capacities, problems, strengths, and weaknesses. This course also provides an understanding of the system implementation process.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1.	**Introduction to ERP:** Define ERP; Origin and Need for an ERP System; Benefits of an ERP System; Reasons for the Growth of ERP Market; Reasons for the Failure of ERP Implementation; Describe Business Process Re-engineering; Know critical Information systems; ERP Security.	6	1
2.	**ERP and Related Technologies:** Describe ERP Tools and Software; ERP Selection Methods and Criteria; ERP Selection Process; ERP Vendor Selection; ERP Implementation, Lifecycle; Pros and cons of ERP implementation; Factors for the Success of an ERP Implementation.	6	2

3.	**ERP Modules Structure:** Analyze different ERP Modules Structure: SCM, Finance, CRM, Payroll, HR, sales.	4	2
4.	**Different ERP Vendors:** Know different ERP Vendors; Know Products and technology; SAP advantage; Know Oracle Corporation: Products and Technology; Oracle Application; Vertical solutions, Microsoft Corporation.	6	2
5.	**Future Directions in ERP:** Describe future Directions in ERP; New Trends in ERP; ERP to ERP II-Implementation of Organization-Wide ERP; Know development of New Markets and Channels; know latest ERP Implementation Methodologies; ERP and E-business.	6	3

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	Understand the fundamental business functions and business processes in an Enterprise
CLO2	Analyze the challenges associated with implementing enterprise systems and their impacts on organizations, ERP Vendors and describe the distinguishing modular characteristics.
CLO3	Evaluate the business blueprint of ERP to offer a solid foundation to support organizational change, different phases in the implementation of ERP system.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO1	PLO2	PLO3	PLO4
CLO1	3			
CLO2				2
CLO3			3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion, Problem based Exercise	Question & Answer, Quiz
CLO2	Lecture, Discussion, Problem based Exercise	Quiz, Question & Answer,
CLO3	Lecture, Discussion, Problem based Exercise	Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	5			
Understand		5	5	5
Apply				
Analyze			5	5
Evaluate			5	5

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Understand	20
Analyze	20
Evaluate	20

LEARNING MATERIALS

Recommended Reading:

"Enterprise Resource Planning" by Summer M., Pearson Education Incorporation

Supplementary Readings:

1. "Enterprise Resource Planning system" by: Daniel E. O'Leary, Cambridge University Press.
2. Managerial Issues of Enterprise Resource Planning Systems by David L. Olson, McGrow Hill Inc. New York Author: David L. Olson.
3. "E-Business and ERP: Transforming the Enterprise." by Grant Norris John Willy & sons, Inc. New York.

Course Code: MIS 4204
Course Title: **Enterprise Resource Planning Lab**
Credit Hours: 01

CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE: The ERP Lab course provides hands-on experience with Enterprise Resource Planning (ERP) systems, helping students understand how integrated business processes work in real-time. It bridges theory with practical application by allowing students to perform tasks in finance, HR, supply chain, and more. The course builds skills in using ERP tools, managing workflows, and generating business reports, preparing students for roles in business management, IT, and operations.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1.	**LAB: ERP: An CRM Perspective:** Describe Role of ERP in CRM; Concept, Objectives, Benefits Components of CRM; Types of CRM: Operational CRM, Analytical CRM, Sales intelligence CRM, Collaborative CRM.	7	1
2.	**LAB: Payroll Module Practical:** Setting up Payroll Parameters, Employee Compensation, Payroll Processing, Taxation and Deductions, Generating Pay slips**.**	7	1
3.	**LAB: ERP: A HR Perspective:** Describe the role of ERP in Human Resource Management; Workflow of ERP human resource management system; Advantages, Functions, Features, Benefits of human resource management module.	7	2
4.	**LAB: ERP: Finance Perspective:** Describe the role of ERP in Finance; Accounting and Finance Processes: Cash management; Capital budgeting; Features of ERP Financial Module; Benefits of ERP Financial Module.	7	3
5.	**LAB: SCM Module Practical:** Inventory Management, Order Processing, Supplier Management, Logistics and Distribution, SCM Analytics	7	3
6.	**LAB: Integrated Business Scenario:** Work on an integrated business scenario that combines Finance, HRM, Payroll, and CRM modules to solve a real-world business problem.	7	3

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	**Understand ERP software** to manage and integrate core business functions such as finance, inventory, and human resources.
CLO2	**Analyze and interpret business data** using ERP tools to support decision-making and generate system-based reports.
CLO3	**Create** Practical knowledge of using ERP software modules (e.g., Payroll, SCM, CRM, HRM)

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO1	PLO2	PLO3	PLO4
CLO1	2			
CLO2				3
CLO3			3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion, Problem based Exercise	Lab Performance, Lab Report/Project., Lab Work
CLO2	Lecture, Discussion, Problem based Exercise	Lab Performance, Lab Report/Project., Lab Work
CLO3	Lecture, Discussion, Problem based Exercise	Lab Performance, Lab Report/Project., Lab Work

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	Lab Report 1 (15)	Lab Report 2 (15)
Remember	5			
Understand		5		
Apply			5	5
Analyze			5	5
Evaluate				
Create			5	5

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Understand	20
Analyze	20
Create	20

LEARNING MATERIALS

Recommended Reading:

"Enterprise Resource Planning" by Summer M., Pearson Education Incorporation

Supplementary Readings:

1. "Enterprise Resource Planning system" by: Daniel E. O'Leary, Cambridge University Press.
2. Managerial Issues of Enterprise Resource Planning Systems by David L. Olson, McGrow Hill Inc. New York Author: David L. Olson.
3. "E-Business and ERP: Transforming the Enterprise." by Grant Norris John Willy & sons, Inc. New York.

Course Code: MIS 4205
Course Title: Business Intelligence
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE

This is a specialized course in information systems and information technology (IS/IT) for undergraduate MIS majors. The course is targeted at senior MIS students who want more expertise in developing, managing, and using decision support systems. This course will examine the design, development, and implementation of information technology-based systems that support managerial and professional work. This course introduces techniques and technologies that use computer resources to improve human decision-making effectiveness. Theories of the human decision-making process include methodologies to develop decision support systems to assist these processes, knowledge-based systems that supplement human knowledge and expertise in order to boost productivity and quality outcomes, and current developments in decision support systems, artificial intelligence, and Expert systems are discussed.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1	**Business Intelligence: Introduction to Business Intelligence,** Definition and scope of Business Intelligence (BI)**,** Evolution of BI and its role in decision-making**,** Components of a BI system**,** BI vs. Business Analytics vs. Data Science**,** Strategic importance of BI in modern businesses	3	CLO 1
2	**Decision Making, Systems, Modeling, and Support:** characteristics of decision making, decision making, problem solving, , decision maker, decision style, decision-making disciplines, concept & types of model, benefits of model, four phases of decision making, how decisions are supported, new technologies to support decision making	6	CLO 1
3	**Data Integration and Data Quality:** Data sources and integration challenges**,** Data cleaning and transformation**,** Master data management**,** Metadata and data governance	3	CLO 2
4	**Data Mining for Business Intelligence and Artificial Neural Networks for Data Mining:** data mining concepts and applications, data mining process & methods, data mining software tools, basic concepts of neural networks, learning in	3	CLO 3

	ANN, developing neural network–based systems, applications of ANN, advantages & disadvantages of ANN		
5	**Text and Web Mining:** text mining concepts, data mining versus text mining, text mining terminology, natural language processing, text mining applications, text mining process, text mining tools, web mining overview	6	CLO 3
6	**Data Warehousing (DW):** DW definitions, characteristics of DW, data marts, ODS, EDW, metadata, DW framework, DW architecture & ETL process, DW development, DW issues	6	CLO 3
7	**Artificial Intelligence and Expert Systems:** concepts and definitions of artificial intelligence, artificial vs. natural intelligence, evolution of artificial intelligence, the artificial intelligence field, basic concepts of expert systems, applications of ES, structure of ES, the human element in ES, knowledge engineering, the knowledge engineering process, problem areas suitable for ES, development of ES, benefits, limitations and success factor of ES	6	CLO 3
8	**LAB Practice :** MSS modeling with spreadsheets, optimization via mathematical programming, multiple goals ,sensitivity, what-if, and goal seeking analysis, decision analysis with decision table and decision tree, problem-solving search methods, simulation, Power BI, Tableau	9	CLO 4

Course Learning Outcome: By the end of the course, student will be able to:

CLO1	Understand the conceptual foundations of Business Intelligence and gain an understanding of the need for computerized support of managerial decision making.
CLO2	Apply knowledge of different nature models in decision-making, Management Support System modeling and the characteristics and capabilities of business intelligence
CLO3	Analyze the concept, purpose and functionality of business intelligence, business analytics, artificial neural networks for data mining, and different emerging technologies for decision making.
CLO4	Evaluate the skills of Business Intelligence professionals through lab practice

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO 1	PLO 2	PLO 3	PLO 4

CLO1	2			
CLO2			3	
CLO3				3
CLO4				3

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion	Question & Answer
CLO2	Lecture, Discussion	Assignment, Question & Answer
CLO3	Lecture, Discussion	Presentation, Question & Answer
CLO4	Lecture, Discussion, Problem Based Exercise	Lab, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation /Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	05			
Understand		02	05	
Apply			05	05
Analyze		03	05	05
Evaluate				05

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Understand	15

Apply	15
Analyze	15
Evaluate	15
Create	00

LEARNING MATERIALS

Recommended Reading:

Decision Support and Business Intelligence Systems by Efraim Turban, Jay E. Aronson, Ting-Peng Liang, Ramesh Sharda; 8th Edition (or Latest Edition) Prentice Hall.

Supplementary Readings:

"Business Intelligence: A Managerial Approach" by Efraim Turban, Ramesh Sharda, Dursun Delen, David King

Course Code: MIS 4206
Course Title: **E-Business**
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE OF THE COURSE

The course is designed for students to learn what electronic methods and standards currently exist in business, how to analyze existing business web activity, and how to develop web business strategies for launching and maintaining business activities on the net.

CONTENT OF THE COURSE

SL. NO.	COURSE CONTENT (as Summary)	Hrs.	CLOs
1	**Introduction to E-business and E-Marketplaces:** Describe and discuss the content and framework of the major types of EC transactions; Analyze the drivers of Reevaluate the benefits of EC to individuals, organizations, and society; Explain E-business 2.0 social media, web 3.0 and other disruptive technologies.	6	1
2	**Retailing in Electronic business:** Classify the primary e-tailing business models; Describe how online travel and tourism services operate and how they influence the industry; Analyze the online employment market.	6	2

3	**E-business Infrastructure: The Internet, Web, And Mobile Platform:** Describe the E-business Infrastructure, the internet, and its technological backgrounds, Understand the internet today & its future trends, the web and the internet.	6	3
4	**E-business Security and Payment Systems:** Understand the scope of E-business crime and security problems, Identify the key security threats in the E-business environment. Describe how technology helps secure Internet communications channels and protect networks, servers, and clients. Identify the major E-business payment systems in use today.	9	3
5	**E-business Marketing and Advertising** **concepts:** Understand the key features of the Internet audience, the basic concepts of consumer behavior and purchasing, and how consumers behave online. Identify and describe the basic digital commerce marketing and advertising strategies and tools. Identify and describe the main technologies that support online marketing. Understand the costs and benefits of online marketing communications.	6	4
6	**Supply Chain Management and Collaborative Commerce:** Discuss the evolution and growth of B2B business, as well as its potential benefits and challenges; understand how procurement and supply chains relate to B2B business; Identify major trends in supply chain management and collaborative commerce; Understand the different characteristics and types of Net marketplaces; Understand the objectives of private industrial networks, their role in supporting collaborative commerce, and the barriers to their implementation.	9	4

Course Learning Outcome: By the end of the course, students will be able to:

CLO1	Understand the purpose and functions of electronic business and describe its various categories.
CLO2	Apply the concept of different E-business Business Models
CLO3	Analyze E-business Infrastructure, methods of E-business Security, and Payment Systems.

CLO4	Evaluate E-business Marketing and Advertising concepts, Supply Chain Management, and Collaborative Commerce.

Mapping of Course Learning Outcomes to Program Learning Outcomes [attainment level used for CLO's from 1(weak)-3(strong) correlation]

PLO's / CLO's	PLO1	PLO2	PLO3	PLO4
CLO1	3			
CLO2			3	
CLO3		2		
CLO4				2

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	Teaching-Learning Strategy	Assessment Strategy
CLO1	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO2	Lecture, Discussion, Problem based Exercise	Assignment, Quiz, Question & Answer
CLO3	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO4	Lecture, Discussion, Problem based Exercise	Presentation, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Remember	5			
Understand			5	5

Bloom's Criteria	Attendance (05)	Assignment/Presentation/Class test (05)	1st Mid Exam (15)	2nd Mid Exam (15)
Apply				5
Analyze		5	5	5
Evaluate			5	
Create				

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Understand	15
Apply	15
Analyze	15
Evaluate	15

LEARNING MATERIALS

Recommended Reading:

E-commerce business. technology. society. by Kenneth C. Laudon Carol Guercio Traver 16th edition. Published by Pearson

Supplementary Readings:

The Complete E-commerce Book: Design, Build & Maintain a Successful Web-based Business by Janice Reynolds, Illustrated edition (October 2000), CMP Books.

Course Code: MIS 4207
Course Title: Strategic Management & Information Systems
Credit Hours: 03
CIE Marks: 40
SEE Marks: 60

RATIONALE

Strategy is a plan formulated with a view to adjusting the major plans to the anticipated reaction of those who will be affected by the plan. It is crafted for a long period of time in order to adjust an organization's internal environment with its external environment. On the other hand, strategic management is

concerned with formulating and implementing effective strategies that promote a superior alignment between the organization and its environment and the achievement of the strategic goals.

COURSE CONTENTS:

SN	CONTENTS	HOURS	CLOs
1	**Strategic Leadership, Managing the strategy making process for competitive Advantage:** Definitions of Strategy, Strategic Management, Emergent and Intended Strategies, Strategic Management Process, pitfalls in strategic decision making, techniques for improving decision making.	3	1, 2 & 3
2	**External Analysis:** The Identification of Opportunities and Threats, The five forces model, the concept of strategic groups, competitive changes during industry evolution. Globalization & industry structure.	3	1, 2 & 3
3	**Internal Analysis:** Distinctive Competencies, Competitive Advantage, and Profitability: The root of competitive advantage, The value Chain, The building blocks of competitive advantage, Business models, the value chain, and generic distinctive competencies, Analyzing competitive advantage and profitability, The durability of competitive advantage competitive advantage and profitability, Avoiding failure and sustaining competitive advantage.	3	1, 2 & 3
4	**Building Competitive Advantage Through Functional-Level Strategy:** The generic building blocks of competitive advantage: efficiency, quality, innovation, customer responsiveness. Distinctive competencies, durability of competitive advantage.	3	1, 2 & 3
5	**Business Level Strategy:** Creating and Sustaining Competitive Advantages: The value chain, achieving superior efficiency: economics scale, learning effects, the experience curve, marketing strategy & efficiency, materials management, strategy, JIT & efficiency , R&D strategy, HR strategy and efficiency , achieving quality: TQM concept, achieving innovation, achieving customer responsiveness	6	1, 2 & 3
6	**Business-Level Strategy and the Industry Environment:** Foundation of business level strategies: customer needs and product differentiation, customer groups and market segmentation, generic competitive strategies at the business level: cost leadership strategy, differentiation strategy, focused strategy. Competitive position, life cycle strategy, investment strategy.	3	1, 2 & 3
7	**Strategy and Technology:** High-Technology industries, Technical standards and Format wars, Technical standards for personal computers, Benefits of standards, Establishments of standards, Strategies for winning a format war. Capturing first-mover advantages and disadvantages, The impact of imitation	6	1, 2 & 3

	of profits of a first mover, Strategies for profiting innovation, Technological paradigm shift, The technology S-curve, Established and successor technologies, Disruptive technology, Strategies implications of paradigm shift for new entrants.		
8	**Strategy in Global Environment:** Profiting from global expansion Pressures for cost reductions and local responsiveness Strategic Choice Profiting from global expansion, Pressures for cost reductions and local responsiveness, Strategic Choice: international, multi domestic, global, and transnational strategies, The Choice of entry mode,Global strategic alliances.	3	1, 2 & 3
9	**Corporate Strategy; Horizontal and Vertical integration, and Strategic Outsourcing:** Creating value through vertical integration, Arguments against vertical integration, Bureaucratic costs and limits of vertical integration, New ventures as Entry strategy, Acquisition Vs new ventures, Pitfalls and guidelines for success, Joint ventures as entry strategy, Restructuring, Portfolio planning: the Boston Consulting Group, Business Matrix.	3	1, 2 & 3
10	**Corporate-Level Strategy; Formulating and Implementing Related and Unrelated Diversification:** Entry strategy, Acquisition Vs new ventures, Pitfalls and Guidelines for success, Joint ventures as entry strategy, Restructuring, Portfolio planning, The Boston Consulting Group Business Matrix, Article on Taj hotel Strategy.	3	1, 2 & 3
11	**Corporate Performance, Governance, and Business Ethics:** Building blocks of organizational structure, Differentiation, Integration and bureaucratic costs, Vertical differentiation, Horizontal differentiation and integrating mechanisms, Strategic control system: function of strategic control, An agency theory, Bureaucratic costs and organizational control system, Market control, Output control, Bureaucratic control, Organizational culture and strategic reward system.	3	1 & 2
12	**Implementing Strategy in Companies That Compete in a Single Industry:** Structure and control at the functional level, Manufacturing, Research and development, Sales, Structure and control at the business level, Global strategy and structure relationship, Structure and control at the corporate level, Structure and control at the business level, Global strategy and structure relationship.	3	2, 3 & 4

Course Learning Outcome (CLO): By the end of the course, student will be able to:

CLO 1	**Explain** the role of strategic management and information systems in achieving organizational

	goals and maintaining competitive advantage.
CLO 2	**Analyze** business environments and internal capabilities to formulate effective strategic plans integrating information system solutions.
CLO 3	**Apply** strategic management frameworks and IS tools to solve complex organizational challenges and support decision-making processes.
CLO 4	**Evaluate** the impact of emerging technologies and digital transformation on strategic planning, organizational structure, and business operations.

Course Learning Outcomes (CLOs) and Mapping of CLOs with Program Learning Outcomes (PLOs)

CLO/PLO	**PLO 1**	**PLO 2**	**PLO 3**	**PLO 4**
CLO 1	3			
CLO 2		3		
CLO 3		3	3	
CLO 4		2	3	

Mapping Course Learning Outcome (CLOs) with the Teaching-Learning and Assessment Strategy

CLOs	**Teaching-Learning Strategy**	**Assessment Strategy**
CLO 1	Lecture, Discussion, Problem based Exercise	Question & Answer
CLO 2	Lecture, Discussion, Problem based Exercise	Assignment, Quiz, Question & Answer
CLO 3	Lecture, Discussion, Problem based Exercise	Presentation, Question & Answer
CLO 4	Lecture, Discussion, Problem based Exercise	Presentation, Question & Answer

ASSESSMENT PATTERN

CIE – Breakup [40 marks]

Bloom's Criteria	**Attendance (05)**	**Class Test/ Assignment/ Presentation**	**1st Mid Exam (15)**	**2nd Mid Exam (15)**
Remember	05			
Understand			05	05
Apply		05	05	05
Analyze			05	05

SEE – Semester End Examination [60 marks]

Bloom Criteria	Score for the Test
Remember	10
Understand	10
Apply	20
Analyze	20

LEARNING MATERIALS

Recommended Readings:

- Arthur A. Thompson, Alonzo J. Strickland , ***Strategic Management : Concept and Cases,*** McGraw-Hill
- Wendy Robson, ***'Strategic Management and Information Systems: An Integrated Approach',*** FT. Prentice Hall, London
- Charke, S. ***Information Systems Strategic*** *Management* Roudledge, London.

Supplementary Readings:

- Baltzam, P. and Philips A. ***Essentials of Business Driven Information System,*** Mcgraw-Hill, USA
- Applegate, L.M., Austem, R.D and Soule, D.L. ***Corporate Strategy and Management,*** Mcgraw-Hill, USA.

Course Code: MIS 4208
Course Title: Viva-Voce
Credit: 02
CIE Marks: 0
SEE Marks: 100

Course Code: MIS 4209
Course Title: Internship
Credit Hours: 03
CIE Marks: 70
SEE Marks: 30

Course Structure Summary:

Year, Semester	No of Courses	Course Type	Credit
1st year 1st semester	05	Theory	15
	01	Lab	01
Total In BBA 1st Year 1st Semester			**16**
1st year 2nd semester	05	Theory	15
	01	Viva-Voce	02
Total In BBA 1st Year 2nd Semester			**17**
2nd year 1st semester	05	Theory	15
Total In BBA 2nd Year 1st Semester			**15**
2nd year 2nd semester	05	Theory	15
	01	Lab	01
	01	Viva-Voce	02
Total In BBA 2nd Year 2nd Semester			**18**
3rd year 1st semester	05	Theory	15
	01	Lab	01
Total In BBA 3rd Year 1st Semester			**16**
3rd year 2nd semester	05	Theory	15
	01	Lab	01
	01	Viva-Voce	02
Total In BBA 3rd Year 2nd Semester			**18**
4th year 1st semester	05	Theory	15
	01	Lab	01
	01	Industry Exploration	02
Total In BBA 4th Year 1st Semester			**18**
4th year 2nd semester	05	Theory	15
	02	Lab	02
	01	Viva-Voce	02
	01	Internship	03
Total In BBA 4th Year 1st Semester			**22**
Total Credit Hours for BBA Program			**140**