DEPARTMENT OF CIVIL ENGINEERING
SCHEME OF COURSE WORK

Course Details:

Course Title	**ACCOUNTING AND ECONOMICS FOR ENGINEERS**
Course Code	**20HM1101**
L T P C	**3 0 0 3**
Program	**B.Tech.**
Specialization	**CIVIL ENGINEERING**
Semester	**IV**
Prerequisites	**Nil**
Courses to which it is a prerequisite	**Nil**

COURSE OUTCOMES (COs):

After completion of this course the student would be able to

CO	Course Outcomes	Learning Outcomes
1	To understand the basic concepts of business and various forms of business organisations.	1. Understand various business concepts and business activities. (L2) 2. Outline various forms of business organisations. (L4) 3. Describe the characteristics of sole proprietorship, partnership firm and Joint Stock Company. (L1) 4. Explain the process of formation of a company. (L2) 5. Explain various forms of public enterprises and their characteristics. (L2)
2	To understand the accounting system and prepare necessary books of accounts.	1. Describe accounting concepts and conventions. (L2) 2. Understand the double entry system of book keeping. (L2) 3. Understand bases of accounting and their significance. (L2) 4. Build journal, ledger and various subsidiary books. (L6) 5. Describe the purpose and preparation of trial balance. (L2)
3	To prepare, analyse and interpret the financial statements using accounting ratios.	1. Develop Trading Account, Profit & Loss Account and Balance Sheet (L6) 2. Understand the treatment of adjustments in final accounts (L2) 3. Solve and interpret various accounting ratios (L3)

4	To study the concepts of managerial economics and apply the concepts of demand analysis.	1. Describe the nature and scope of managerial economics (L2) 2. List out the different types of demand (L1) 3. Explain the law of demand and its exceptions (L2) 4. Understand various types of elasticity of demand (L2) 5. Outline various demand forecasting techniques (L4)
5	To describe various production theories, market structures and apply the concepts of break-even techniques for managerial decisions.	1. Explain the production function with one variable of input and two variables of input (L2) 2. Recognise various cost concepts (L5) 3. Determine Break Even Point (L3) 4. Solve managerial problems using BEA (L3)

PROGRAMME OUTCOMES

1. Graduates will be able to apply the knowledge of mathematics, science, engineering fundamentals to solve complex civil engineering problems.
2. Graduates will attain the capability to identify, formulate and analyse problems related to civil engineering and substantiate the conclusions
3. Graduates will be in a position to design solutions for civil engineering problems and design system components and processes that meet the specified needs with appropriate consideration to public health and safety.
4. Graduates will be able to perform analysis and interpretation of data by using research methods such as design of experiments to synthesize the information and to provide valid conclusions.
5. Graduates will be able to select and apply appropriate techniques from the available resources and modern civil engineering and software tools, and will be able to predict and model complex engineering activities with an understanding of the practical limitations.
6. Graduates will be able to carry out their professional practice in civil engineering by appropriately considering and weighing the issues related to society and culture and the consequent responsibilities.
7. Graduates will be able to understand the impact of the professional engineering solutions on environmental safety and legal issues.
8. Graduates will transform into responsible citizens by resorting to professional ethics and norms of the engineering practice.

9. Graduates will be able to function effectively in individual capacity as well as a member in diverse teams and in multidisciplinary streams.
10. Graduates will be able to communicate fluently on complex engineering activities with the engineering community and society, and will be able to prepare reports and make presentations effectively.
11. Graduates will be able to demonstrate knowledge and understanding of the engineering and management principles and apply the same while managing projects in multidisciplinary environments.
12. Graduates will engage themselves in independent and life-long learning in the broadest context of technological change while continuing professional practice in their specialized areas of civil engineering.

PROGRAMME SPECIFIC OUTCOMES(PSOs):

1. Collect, process and analyse the data from topographic surveys, remote sensing, hydrogeological investigations, geotechnical explorations, and integrate the data for planning of civil engineering infrastructure.

2. Analyse and design of substructures and superstructure for buildings, bridges, irrigation structures and pavements.

3. Estimate, cost evaluation, execution and management of civil engineering projects.

Course Outcome Vs Program Outcomes:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	-	-	-	-	-	-	-	-	-	1	3	1
CO2	-	-	-	-	-	-	-	-	-	3	2	-
CO3	-	-	-	-	-	-	-	-	-	3	2	-
CO4	-	-	-	-	-	-	-	-	-	1	3	-
CO5	-	-	-	-	-	-	-	-	-	1	3	-

Course Outcome Vs Programme Specific Outcomes:

CO	PSO1	PSO2	PSO3
CO1	-	-	-
CO2	-	-	-
CO3	-	-	-
CO4	-	-	-
CO5	-	-	-

Mapping Levels:
1: Slight (Low), 2: Moderate (Medium), 3: Substantial (High), put -: No Correlation

Assessment Methods:	Assignment / Quiz / Seminar / Case Study / Mid-Test / End Exam

Teaching-Learning and Evaluation:

Week	TOPIC / CONTENTS	CO	Sample questions	Teaching-learning strategy	Assessment Method & Schedule
1	UNIT - I: Business: Characteristics, Objectives, Classification of business activities - Industry and Commerce, Industry-types: primary, secondary, tertiary; Commerce-trade: types-internal, external; wholesale and retail and auxiliaries to trade	1	1. Explain the characteristics and objectives of a business. 2. Classify the business activities.	Lecture Discussion	Assignment/ Quiz
2	Forms and Features of Business Organisation: Sole Proprietorship, Partnership - Definition, kinds of partners, Advantages and limitation of partnership firm, Partnership deed,	1	1. Define sole proprietorship. Explain its merits and demerits. 2. Discuss the features, advantages and limitations of partnership firm.	Lecture Discussion	
3	Joint Stock Company - Concept, merits and limitations, Types, Formation of company, Public sector and private sector enterprises, Forms of public sector enterprises.	1	1. Explain the steps involved in formation and registration of the company. 2.Explain the various forms or public sector enterprises.	Lecture Discussion	
4	UNIT – II: Introduction to Financial Accounting: Definition, Importance, Principles - Concepts & Conventions, Double entry book keeping system,	2	1. Explain the various concepts and conventions of accounting. 2. What do you mean by Double entry system of book keeping? Explain its advantages and disadvantages.	Lecture Discussion	
5	Bases of accounting - Cash basis and Accrual basis Journal, Ledger,	2	1. Explain the basis of accounting system. 2. Numerical problems on Journal and ledger.	Lecture Discussion Problem Solving	
6	Subsidiary books and Trial Balance.	2	1. Explain the different subsidiary books. 2. Numerical problems on subsidiary books and trial balance.	Lecture Discussion Problem Solving	

7	UNIT–III: Financial Statements: Objective, Importance and Limitations, Trading Account, Profit and Loss Account, Balance Sheet	3	1. Explain the importance and objectives of financial statements. 2. Describe the significance of profit and loss account.	Lecture Discussion Problem Solving	
8	Grouping of assets and liabilities, Preparation of final accounts with simple adjustments.	3	1. Simple Numerical problems on Final Accounts without and with adjustments	Lecture Discussion Problem Solving	
9	**MID-I**				
10	Interpretation of financial statements: Accounting Ratios - Objectives, Classification,	3	1. Explain the limitations accounting ratios. 2. What are the different types of ratios which indicate the financial position of the firm?	Lecture Discussion Problem Solving	
11	Limitations and Computation (simple numerical problems).	3	2. Numerical problems on ratios	Lecture Discussion Problem Solving	
12	UNIT – IV: Managerial Economics: Definition, Nature and Scope of Managerial Economics Demand Analysis: Definition, types of demand, Demand Determinants, Law of Demand and its exceptions	4	1. Explain the nature and scope of managerial economics. 2. What is the law of demand? Explain its limitations.	Lecture Discussion	Assignment/ Quiz
13	Elasticity of Demand: Definition, Types, Significance of Elasticity of Demand	4	1. What is elasticity of demand? Explain its types. 2. Explain the significance of elasticity of demand.	Lecture Discussio n Problem Solving	
14	Demand Forecasting: Definition, methods of demand forecasting	4	1. What is demand forecasting? 2. Explain the survey methods of demand forecasting.	Lecture Discussion	
15	UNIT - V: Production Function: Concept, Law of Variable Proportions, Iso-quants and Iso- costs and Least Cost Combination of Inputs.	5	1. Explain the law of variable proportion with an illustration. 2. What are Iso-quants? Explain its features.	Lecture Discussion	
16	Cost Analysis: Types of	5	1. Discuss the		

	Cost (Short run and Long run, Fixed and Variable cost, Marginal cost, Opportunity cost and Replacement cost). Break-Even Analysis (BEA) - Determination of Break-Even Point (Simple numerical problems)		different types of costs. 2. Explain break-even analysis with an example. 3. Numerical problems on break even analysis.	Lecture Discussio n Problem Solving	
17	Managerial applications and limitations of BEA Types of markets: Perfect, Monopoly and Monopolistic markets – Concepts and Features.	5	1. Explain the managerial applications of BEA. 2. Discuss the features of perfect competitive market.	Lecture Discussion	
18	**MID-II**				
19	**END EXAM**				