



GUJARAT TECHNOLOGICAL UNIVERSITY
Syllabus for Integrated M.Sc. (Computer Science)
(With Specialization: AI and Data Science/IoT/ Cyber Security)

**With effective
from academic
year 2022-23**

Subject Code: 1340301
Semester- IV
Subject Name: System Analysis and Design

Teaching and Examination Scheme

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE(E)	PA (M)	PA (V)	PA (I)	
3	0	2	4	70	30	30	20	150

Content:

Sr. No.	Content	Teaching Hours	Module Weightage (%)
1.	System Concepts and Information Systems Environment: The System Concept: Definition, Characteristics of Systems, Elements of a System, Open and Closed System, Formal and Informal Information Systems, Computer based Information Systems, Management Information System, Decision Support System, General Business Knowledge, and Interpersonal Communicational System.	8	20
2.	Feasibility Study: System performance, Economic Feasibility, Technical Feasibility, Behavioural Feasibility, Steps in Feasibility Analysis. H/W & S/W Selection and Maintenance: The Computer Industry, S/W Industry, a Procedure for H/W & S/W Selection, Major Phases in Selection, Criteria for S/W Selection, The Used Computer, The Computer Contract.	8	20
3.	The System Development Life Cycle: Recognition of needs, Impetus for System Change, Feasibility Study, Analysis, Design, Implementation, Post implementation & Maintenance. The Role of the Systems Analyst: Historical Perspective, The War Effort, What Does it take to do System Analysis, Academic & Personal Qualifications, The Multifaceted role of the Analyst, The Analyst/User Interface, Behavioural issues.	8	20
4.	Systems Planning & Initial Investigation: Strategies for Determining Information Requirement, Problem Definition & Project initiation, Background Analysis, Fact Analysis, Review of Written Documents, Onsite Observations, Interviews & Questionnaires, Fact Analysis, Performance Analysis, Efficiency Analysis, Service Analysis.	8	20
5.	Information Gathering: What Kind of Information do we need? Information about the firms, Information gathering tools, the art of Interviewing, Arranging the Interview, Guides to a Successful Interview, Types of Interviews and Questionnaires, The Structured and Unstructured Alternatives. The Tools of Structured Analysis:	8	20



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	The Dataflow Diagram (DFD), Data Dictionary, Decision Trees and Structured English.		
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Reference Books:

1. Systems Analysis & Design, Awad E. M., Galgotia Publication.
2. System Analysis & Design, Mansoor A., Pragya Publication.
3. System Analysis & Design, Hawryskiewycz I., PHI.

Course Outcome:

After learning the course, the students should be able to:

No.	CO statement
CO-1	Identify the requirements of software projects in an organization after studying various functionalities of organization.
CO-2	Perform feasibility study of proposed system from different perspectives.
CO-3	Implement, test and maintain the software system.
CO-4	Get acquainted with different quality standards as well as learn about Management Information Systems.