



# Marwadi University

## Bachelor of Computer Application

### Semester III

Subject Code : 05BC0303

Subject Name: System Analysis and Design (SAD)

#### Learning Objectives:

System Analysis and Design is a practical field that relies on a core set of concepts and principles. The objective of this course is to teach the students tried-and-tested techniques widely embraced by experienced analysts that recent graduates are expected to apply on the job. The course is meant to give balanced exposure to traditional approach to system analysis and design.

#### Prerequisites:

Fundamentals of Structured Programming

#### Course Content:

Unit	Course Content	Hours
1	<b>System concepts:</b> The systems concept, Definition, characteristics of a system, Types of systems, Introduction to fundamental information systems, Transaction processing systems, Management Information systems, Decision support systems, Expert systems, Office information systems, Personal and workgroup information system-System Development Life Cycle: Various phases of system development, Considerations for system planning and control for system success-Role of system analyst.	10
2	<b>System Planning:</b> Bases for planning in system analysis: Dimensions of Planning. Initial Investigation: Determining user's requirements and analysis, fact finding process and techniques. Tools of structured Analysis: Data Flow diagram, data dictionary, IPO and HIPO charts, Gantt charts, pseudo codes, Flow charts, decision tree, decision tables, Structured English, Computer Aided System Engineering (CASE), A CASE tool frame work.	10
3	<b>Cross life cycle activities:</b> Fact-Finding, Tools, Review of literature, procedures, forms, files, on-site observation, Research and site visits, Interviews and questionnaires, Type of interviews and questionnaires, joint application development (JAD), JAD participants, planning and conducting AD sessions ,Benefits. Feasibility and Cost-Benefit Analysis: Feasibility considerations, Steps in feasibility analysis, Feasibility report, cost-benefit analysis, categories, data analysis, Procedure for cost benefit determination, the system proposal.	10
4	<b>System Design:</b> Strategies for good system design, Introduction to structured design, object - oriented design, logical and physical design.Input/output forms design: Methods and issues for data capture and input, data entry, data input Model input methods, Principles and guidelines for output design, Types of outputs, Media and formats, System user's issues for output design. File Organization and database design: Introduction to files and database, File structures and organization, objectives of database design, logical and physical view of data.	10
5	<b>System testing and quality assurance:</b>	08



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	Testing, different methods, Nature of test data, Test plan, testing techniques, activity networks for system testing. Quality assurance: goals in system development, trends, procedure, ISO certification. Implementation and Software maintenance: Conversion, Activity network for conversion, Post-implementation review, Software maintenance, Primary activities of a maintenance procedure, reducing maintenance costs, Software Documentation.	
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#### **Text Book(s):**

1. Awad, Elias M: "System Analysis and Design" Second Edition. Galgotia Publication Pvt.Ltd.
2. Edward," System Analysis & Design ", Tata McGraw Hill, ISBN:8120317270.
3. Rajaraman," Analysis and Design of Information System", PHI Publication, ISBN - 8120312270

#### **Reference Book(s):**

1. Sen, James A: "Analysis and Design of Information Systems". Mc-GrawHill International edition.
2. Jeffrey L.Whitten: "System analysis and design methods". Mc-Graw Hill International.
3. Igor Hawryszkiewycz, "Introduction to System Analysis and Design", Prentice-Hall.
4. Jeffrey L. Whitten, and Lonnie D. Bentley, "Systems analysis and Design Methods", Tata McGraw-Hill.
5. Mark Lejk, and David Deeks, "An Introduction to System Analysis Techniques", Prentice Hall.
6. Don Yeates, Maura Shields and David Helmy, "System Analysis and Design", Longman group limited.

#### **Accomplishment of the student after completing the course :**

After completion of the course the students would be well versed with

- The role of System Analyst
- Modern structured analysis approaches
- Preparing system design with different diagrams
- The activity set to be performed after coding i.e. testing and quality assurance and implementation aspects.