

## **2.12 30331 SYSTEM ANALYSIS AND DESIGN**

### **OBJECTIVES:**

The course has been designed to provide a solid foundation of systems principles and an understanding of how business function, while heightening students to the issues analysts face daily.

### **UNIT-1 INTRODUCTION [8%] SYSTEM DEFINITION AND CONCEPTS**

- 1.1 Characteristics and types of system, Manual and automated systems Real-life Business sub-systems:
- 1.2 Production, Marketing, Personal, Material, Finance Systems models types of models:
- 1.3 Systems environment and boundaries, Real-time and distributed systems, Basic principles of successful systems

### **UNIT-2. SYSTEMS ANALYST [2%] ROLE AND NEED OF SYSTEMS ANALYST**

- 2.1 Qualifications and responsibilities,
- 2.2 Systems Analyst as an agent of change,

### **UNIT-3 SYSTEM DEVELOPMENT CYCLE [4%] INTRODUCTION TO SYSTEMS DEVELOPMENT LIFE CYCLE (SDLC)**

- 3.1 Various phases of development: Analysis, Design, Development, Implementation, Maintenance Systems documentation considerations:
- 3.2 Principles of systems documentation, Types of documentation and their importance, enforcing documentation discipline in an organization.

### **UNIT-4. SYSTEM PLANNING [8%] 28PTU/BOS/IT/101/24-03-2004/BATCH-2002 DATA AND FACT GATHERING TECHNIQUES**

- 4.1 Interviews, Group communication, Presentations, Site visits.
- 4.2 Feasibility study and its importance Types of feasibility reports System Selection plan and proposal
- 4.3 Prototyping Cost-Benefit and analysis: Tools and techniques

### **UNIT-5 SYSTEMS DESIGN AND MODELING [25%] PROCESS MODELING**

- 5.1 Logical and physical design, Design representation, Systems flowcharts and structured charts,
- 5.2 Data flow diagrams, Common diagramming conventions and guidelines using DFD and ERD diagrams.
- 5.3 Data Modeling and systems analysis, designing the internals: Program and Process design,
- 5.4 Designing Distributed Systems.

### **UNIT-6. INPUT AND OUTPUT [4%]**

- 6.1 Classification of forms: Input/output forms design,
- 6.2 User-interface design, Graphical interfaces

## **UNIT-7 MODULAR AND STRUCTURED DESIGN [8%] MODULE SPECIFICATIONS**

7.1 Module coupling and cohesion, Top-down and bottom-up design.

## **UNIT-8 SYSTEM IMPLEMENTATION AND MAINTENANCE [5%] PLANNING CONSIDERATIONS**

8.1 Conversion methods, producers and controls, System acceptance Criteria,

8.2 System evaluation and performance, Testing and validation,

8.3 Systems qualify Control and assurance, Maintenance activities and issues.

## **UNIT-9 SYSTEM AUDIT AND SECURITY [4%] COMPUTER SYSTEM AS AN EXPENSIVE RESOURCE**

9.1 Data and Strong media 29PTU/BOS/IT/101/24-03-2004/batch-2002 Procedures and norms for utilization of computer equipment,

9.2 Audit of computer system usage, Audit trails, Types of threats to computer system and control measures:

9.3 Threat to computer system and control measures, Disaster recovery and contingency planning

## **UNIT-10 OBJECT ORIENTED ANALYSIS AND DESIGN [12%]**

10.1 Introduction to Object Oriented Analysis and design life cycle, object modeling:

10.2 Class Diagrams, Dynamic modeling:

10.3 State diagram, Dynamic modeling:

10.4 sequence diagramming.

### **Reference Books:**

1. System Analysis and Design Methods, Whitten, Bentley and Barlow, Galgotia Publication.
2. System Analysis and Design Elias M. Award, Galgotia Publication
3. Modern System Analysis and Design, Jeffrey A. Hofer Joey F. George Joseph

