

**Dr. Devanand Shinde**  
Vice Chancellor Incharge  
University of Mumbai,  
Mumbai

**Dr. Dhaneswar Harichandan**  
Director Incharge,  
Institute of Distance & Open Learning,  
University of Mumbai, Mumbai

**Anil R. Bankar**  
Associate Prof. of History & Asst. Director &  
Incharge Study Material Section,  
IDOL, University of Mumbai

**Programme & Course  
Co-ordinator & Editor** : **Mrs. R. Srivaramangai**  
Head, Dept of I.T.  
University of Mumbai, Mumbai - 400 098.

**Course Writers** : **Umesh Shinde**  
K.J. Somaiya Institute of Engineering & IT,  
Somaiya Ayurvihar Complex,  
Sion, Mumbai - 400 022

: **Nisha Vanjari**  
K.J. Somaiya Institute of Engineering & IT,  
Somaiya Ayurvihar Complex,  
Sion, Mumbai - 400 022

: **Mrs. Manisha Bhabad,**  
Senior Executive,  
M.D. India Health Care Services Pvt. Ltd.  
Somaiya Ayurvihar Complex,  
Vadgaon, Pune.

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I

**M.C.A. SEM -I ,PAPER -II**  
**SYSTEM ANALYSIS AND DESIGN**

**1. Introduction**

- Systems and computer based systems, types of information system
- System analysis and design
- Role, task and attribute of the system analyst

**2. Approaches to System development**

- SDLC
- Explanation of the phases
- Different models their advantages and disadvantages
  - Waterfall approach
  - Iterative approach
  - Extreme programming
  - RAD model
  - Unified process
  - Evolutionary software process model
    - Incremental model
    - Spiral model
    - Concurrent development model

**3. Analysis : Investigating System Requirements**

- Activities of the analysis phase
- Fact finding methods
  - Review existing reports, forms and procedure descriptions
  - Conduct interviews
  - Observe and document business processes
  - Build prototypes
  - Questionnaires
  - Conduct jad sessions
- Validate the requirements
  - Structured walkthroughs

**4. Feasibility Analysis**

- Feasibility Study and Cost Estimates
- Cost benefit analysis
- Identification of list of deliverables

## 5. Modeling System Requirements

- Data flow diagram logical and physical
- Structured English
- Decision tables
- Decision trees
- Entity relationship diagram
- Data dictionary

## 6. Design

- Design phase activities
- Develop System Flowchart
- Structure Chart
  - Transaction Analysis
  - Transform Analysis

Software design and documentation tools

- Hipo chart
- Warnier orr diagram

Designing databases

- Entities
- Relationships
- Attributes
- Normalization

## 7. Designing input, output and interface

- Input design
- Output design
- User interface design

## 8. Testing

- Strategic approach to software testing
- Test series for conventional software
- Test strategies for object – oriented software
- Validation testing
- System testing
- Debugging

## 9. Implementation and Maintenance

- Activities of the implementation and support phase

## 10. Documentation

Use of case tools,

Documentation – importance, types of documentation

**Books :**

1. "Analysis and Design of Information Systems" : Senn, TMH.
2. System Analysis and Design : Howryskiewycz, PHI.
3. "System Analysis and Design" : Awad.
4. "Software Engineering A practitioners Approach" : Roger S. Pressman TMH.
5. "System Analysis and Design Methods : Whitten, Bentley.
6. "Analysis and Design of Information Systems" : Rajaraman, PHI.

