FACULTY OF COMPUTER APPLICATIONS
Bachelor of Computer Applications

- **Sem** : 2
- **Subject Code** : 05BC1202
- **Subject** : System Analysis and Design
- **Course Objectives** :
    1. To ensure systematic Software Development using tools and techniques.
    2. To impart knowledge about proper design and documentation.
    3. Obtaining practical knowledge about User requirements.
- **Prerequisites** : Understanding of Information Systems

Unit No	Topics Covered	No of lectures required
1	**System analysis basics** Types of systems, Integrating technologies for system, Need for system analysis and design, Role of system analyst, System Development Life Cycle, Impact of maintenance, Using CASE tools, Agile approach	**5**
2	**Information Requirement analysis** **Information gathering methods :** interviewing, JAD, usage of questionnaire , Sampling, Investigation, Observing decision maker's behavior and physical environment **Agile modeling and prototyping :** Prototyping, Developing a prototype, Rapid application development, Agile modeling	**10**
3	**Process of Analysis** **Using data flow diagrams:** Data flow approach, Developing data flow diagrams, Logical and physical data flow diagrams, Example **Data dictionaries:** Data dictionary, data repository, creating data dictionary, using data dictionary, Process specifications and structured decisions, Overview of process specifications, Structured English, Decision tables, Decision trees	**13**

4	**Design of system** **Designing output**: output design objectives, relating output content to output method, realizing output bias effects, designing output for displays, designing output for websites **Designing input:** Good form design, Good display and web forms design, Intranet and internet page design **Designing database**: Databases, data concepts, normalization, guidelines for master file/database relation design, denormalization, data warehouse **Human Computer Interaction(HCI)** : Understanding HCI, usability, Types of user interface, guidelines for dialog design, feedback for users	15
5	**Quality assurance and implementation** **Designing accurate data entry procedures**: Effective coding, effective and efficient data capture, Ensuring data quality through input validation, **Quality assurance and implementation:** TQM approach, Documentation approach, Testing, maintenance and auditing, Implementing distributed systems, Training users, Conversion to a new system, evaluation	7

Course Outcomes:

1. First outcome: Knowledge of steps in Software Development
2. Second outcome: Application of Information gathering methods.
3. Third outcome: Depiction of Analysis in terms of diagrams and tables.
4. Fourth outcome: Creating effective User Interface Design.
5. Fifth outcome: Ensuring Quality Assurance and effective implementation of system.

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Text Book:

1. System Analysis and Design, Kenneth Kendall and Julie Kendall, Prentice Hall, 8th Edition

Reference Books:

1. Modern System Analysis and Design, Joseph Valacich and Joey George, Pearson , 8th edition
2. Analysis and Design of Information Systems, James A Senn, TMH, 2nd edition
3. Workbook on System Analysis and Design, V.K Garg.
4. System Analysis and Design methods, Jeffrey Whitten and Lonnie Bentley, McGraw-Hill, 7th edition
5. Analysis and Design of Information systems, V. Rajaraman, PHI, 3rd edition

Web References:

1. https://nptel.ac.in/courses/106108103/
2. https://www.tutorialspoint.com/system_analysis_and_design/

Syllabus Coverage from text /reference book & web/app reference:

Unit No	Chapter Numbers
1	Text Book, Chapter 1
2	Text Book, Chapter 4,5,6
3	Text Book, Chapter 7,8,9
4	Text Book, Chapter 11,12,13,14
5	Text Book, Chapter 15,16

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CASE STUDY

1. Prepare the following for E-commerce portal
    a. SRS
    b. Context flow and Level – 0 (Dia or any open source tool)
    c. Data repository design
2. Prepare Decision table and decision tree for one of the following:
    a. Calculating PF contribution of employee
    b. Deciding on discount policy
3. Prepare wireframe (Using open source tools)for
    a. E-commerce portal (Web)
    b. E-commerce mobile app

Note: Student can take case study of other web applications or mobile applications also like transport booking system like redbus, railway reservation system etc.