KADI SARVA VISHWAVIDYALAYA
BCA – SEMESTER II
BCA 203 System Analysis and Design

Rationale:
Systems Analysis is a central part of systems development. It comprises the process of turning a set of user requirements into a logical system specification and encompasses various activities to achieve this end. The traditional systems lifecycle has been challenged by alternative models, for example the spiral (iterative and incremental) lifecycle and rapid application development. There are a variety of systems development approaches including the structured approach, the object oriented approach. Systems Analysis activities will be studied in the context of these trends. Candidates should be familiar with at least one structured approach (e.g. SSADM) and one object oriented approach (e.g. the Unified Process).

Learning Outcomes: Students will be able to:
- To understand the role of systems analysis within various systems development life cycles.
- To develop an awareness of the different approaches that may be taken to systems analysis.
- To understand the systems analyst's activities, and apply current tools and techniques.
- Describe different life cycle models and explain the contribution of systems analysis within them.
- Discuss various systems analysis approaches and explain their strengths and weaknesses.
- Evaluate the tools and techniques that may be used by a systems analyst in a given context.
- Use appropriate methods and techniques to produce a systems analysis for a given scenario.
- Provide suitable systems documentation for an analysis.
- Discuss the CASE tools currently available to support the analyst
- Finalize the Project Definition, Analysis and Designing for the final project.

Teaching and Evaluation Scheme: The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations which consist of Term Work such as class test, quizzes, class participation, home assignments, presentation, regular attendance (i.e. Minimum 85%). Internal marks which consist of 40 marks (20 Term Work + 20 Sessional Exams) and External marks which consist of 60 for University examination. The practical of the subject is of 50 marks (25 marks as Internal + 25 marks as external).

Note: The Practical BCA 208 is combination of Practical of the subject BCA 203 & BCA 204.

Sr. No./ Subject Code	Subject Title	Teaching Scheme		Exam Scheme					
				Theory		Practical		T.W +Sessional Marks	Total Marks
		Cr.	Theory/ Practical + Tut	Hrs.	Max Marks	Hrs.	Max Marks		
BCA203	**System Analysis and Design**	4	3 + 1	3	60	-	-	40	100
BCA 208	**Practical (203)**	2	2	-	-	1.5	25	25	50

Course Content:

Unit 1: Introduction to System Analysis and Design **[15%]**

Business Process Modeling, Information System Components, Business Information System, Types of Business Information System, Organizational Structure, System Development Techniques and Tools, Overview of System Development Methodologies, System Development Life Cycle, Information Technology Department, System Analyst Position.

No of Lectures: 05

Unit 2: Preliminary Investigation and Requirements Modeling **[30%]**

The Importance of Strategic Planning, Framework for Systems Development, Information System Projects, Evaluation of System Request, Preliminary Investigation Overview, Steps in Preliminary Investigation.
Systems Analysis Phase Overview, Systems Development Methods, Scalability and Total Cost of Ownership, Fact Finding, Interviews, Fact Finding Techniques.

No of Lectures: 10

Unit 3: Static and Dynamic Modeling **[20%]**

Data And Process Modeling: Data Flow Diagrams, Data Dictionary, Process Description Tools, Logical Vs Physical Models, Overview of Application Development, Structured Application Development, Structure Chart, Cohesion and Coupling, Coding, Prototyping, Object Oriented Application Development.

No of Lectures: 08

Unit 4: System Design **[15%]**

User Interface, Input and Output Design: User interface design, input design, and output designing issues, printed output, and overview of data design.

No of Lectures: 05

Unit 5: Application Development **[10%]**

Quality Assurance, Testing the Application, Documentation, Management Approval.

No of Lectures: 04

Unit 6: Installation and Evaluation **[10%]**
Operational and Test Environment, Training, System Change Over, Post Implementation Task, Final Report to Management.

No of Lectures: 03

Total No of Lectures: 35
Total No of Practical: 10 (Based on CASE Tools)

Text Books:
System Analysis and Design, 4th edition, by Shelly Cashman, Rosenblatt (Thomson).

Reference:
System Analysis and Design, 3rd edition, by Elias Awad (Galgotia Publications).

Instructional Strategies:
1. Building Background
2. Direct Instruction
3. Review and check of Prior knowledge
4. Integrate topics and concepts
5. Guided Practice
6. Independent Practice
7. Demonstration using technology tools
8. Provide examples to transfer learning
9. Problem Solving.
10. Case Study

List of Practical:

1. Project Planning
2. System Diagram
3. Data Flow Diagram
4. Use CASE Diagram
5. Sequence Diagram
6. Activity Diagram
7. Class Diagram
8. Data Dictionary Creation
9. Functional Decomposition Diagram
10. Process Description tools.

Total No of Practical: 10 (Based on CASE Tools)

Teaching and Examination Scheme

UNIT	Examination Scheme % weightage	Teaching Scheme No. of Lecture
Unit 1	**15**	**5**
Unit 2	**30**	**10**
Unit 3	**20**	**8**
Unit 4	**15**	**5**
Unit 5	**10**	**4**
Unit 6	**10**	**3**
Total	**100**	**35**