City University

Department of Computer Science and Engineering Faculty of Science and Engineering

CSE 325: System Analysis & Design

Part-A

Course Code: CSE 325
Course Title: System Analysis & Design
Course Type: Core Course
Semester: 3rdSemester
Academic Session: Summer 2023
Course Instructor: Sharmin Akter
Prerequisites:
Credit Value: 3 Credits
Contact Hours: 3 Hours/week
Total marks: 100

Rationale: Different types of information; Qualities of information; Analysis of information requirements for modern organizations; Role, tasks and attributes of a Systems Analyst; System Development Life Cycle (SDLC); Sources of information; Information gathering techniques; Editing; Handling of missing information; Requirements specifications; Steps of systems analysis; Concepts of feasibility analysis; Analysis of technical facilities; Cost-benefit analysis; Design of an information system; Network models for project time estimation; Estimation of confidence level; Simplex method for minimization of project time; Project effort analysis methods; Designing of inputs and outputs; Hardware and software analysis; Telecommunications requirements analysis; Project team organization; Database and files design; Project management and documentation; Analysis of system maintenance and upgrading; Ethics and privacy; Control and security; Case studies of various information systems such as Library management system, inventory system, voter identity management system, payroll system, etc.

Course Objectives:

- To describe principles, concepts and practice of System Analysis and Design process.
- To explain the processes of constructing the different types of information systems.
- To apply object oriented concepts to capture a business requirements.
- To design and develop of information systems in real world business environment..

Course Learning Outcomes (CLOs) of the Course

CLO1: Will be able to understand the principles and tools of systems analysis and design and professional and ethical responsibilities of practicing the computer professional including understanding the need for quality.
CLO2: Will be able to Solve a wide range of problems related to the analysis, design and construction of information systems
CLO3: Students will be able to make Analysis and Design of systems of small sizes.
CLO4: Will create positive attitude to an understanding of the object-oriented methods models as covered by the Unified Modelling Language.

Mapping of course CLO and PLO

Course	Program Learning Outcome (PLO)											
Learning Outcome (CLOs) of the Course	1	2	3	4	5	6	7	8	9	10	11	12
CLO 1	×											
CLO 2		×										
CLO 3			×									
CLO 4												×

Course plan specifying content, CLOs co-curricular activities, teaching learning and assessment strategy mapped with CLOs.

Part-B: Content of the course

Week	Topic	Teaching –Learning Strategy	Assessment Strategy	Corresponding CLOs
Week 1	**The Context of Systems Development Project*:*** the context of systems analysis and design methods,	• Demonstration • Lecture • Discussion	• Short question	1,2
Week 2	Information system building blocks, information systems development, project management.	• Lecture • Discussion	• Observational Skill • Comprehension • Short question	1,2
Week 3	**System Analysis Methods:** Systems analysis, fact-finding techniques for requirements discovery,	• Lecture • Demonstration • Logic Development • Implementation	• Problem solving • Implementation skill • Short question	1,2
Week 4,5	modeling system requirements with use cases, data modeling and analysis, information.	• Lecture • Demonstration • Implementation	• Problem solving • Implementation skill • Short question	1,2
	Process modeling, feasibility, analysis and the system proposal,	• Lecture • Demonstration • Logic Development • Implementation	• Problem solving • Implementation skill • Short question	3,4
Week 5,6	object-oriented analysis and modeling using the UML ,Acyclic graphs.	• Lecture • Demonstration • Logic Development • Implementation	• Logical questions • Design strategy • Implementation skill	3,4
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Week 7,8	**System Design Methods:** Systems design, application architecture and modeling. Data base design, output design and prototyping,	• Lecture • Demonstration • Logic Development • Implementation	• Observational Skill • Implementation assessment, • Comprehension • Short question • Problem solving	3,4
Week 9	Input design and prototyping, user interface design,	• Lecture • Demonstration • Logic Development • Implementation	• Observational Skill • Implementation assessment, • Comprehension • Short question • Problem solving	3,4

Week 10,11	Object-oriented the design and modeling using UML.	• Lecture • Demonstration • Logic Development • Implementation	• Observational Skill • Implementation assessment, • Comprehension • Short question • Problem solving	3,4
Week 12	**Beyond System** Analysis and Design Methods: Systems constructions and implementation, system operations and support	• Lecture • Demonstration • Logic Development • Implementation	• Observational Skill • Implementation assessment • Comprehension • Short question • Problem solving	3,4

Part C- Assessment and Evaluation

Assessment Strategy:

Continuous Assessment	Class Participation and Performance :	10%
	Class test/ Quiz :	10%
	Assignment/ presentation :	10%
Summative Assessment	Midterm Examination :	30%
	Final Exam :	40%

Part D-Learning Resources

List of References

Course Notes: Follow Lecture notes

Essential Books (Text Books): Whitten Bentley: System Analysis & Design Method.

V.Rajaraman : System Analysis & Design.

Recommended Reference Books: Gerald M. Weinberg : Rethinking System Analysis & Design

Online Recourses: Use Internet to get documents on specific topics

1. **Facilities Required for Teaching and Learning**
   Projector, Whiteboard, Internet access from classroom computer, Audio/Visual equipment.