

City University
Department of Computer Science & Engineering
Faculty of Science & Engineering
Course Outline

Course Code: CSE 325 **Course Title:** System Analysis and Design **Credit hours:** 3
Prerequisites: CSE 115 , CSE 116 **Semester:** Spring 2019
Total Weeks: 13 **Hours/Week:** 3 **Total Hours:** 39+
Instructor: Supta Richard Philip **Designation:** Senior Lecturer
Office: Room 403 **Phone:** 01914818982
Email: supta.philip@gmail.com **Office Hrs:** By appointment

Course Details

Course Description

The Context of Systems Development Project: the context of systems analysis and design methods, information system building blocks, information systems development, project management. System Analysis.

Methods: Systems analysis, fact-finding techniques for requirements discovery, modeling system requirements with use cases, data modeling and analysis, process modeling, feasibility analysis and the system proposal, object-oriented analysis and modeling using the UML.

System Design Methods: Systems design, application architecture and modeling, data base design, output design and prototyping, input design and prototyping, user interface design, object-oriented design and modeling using the UML. Beyond System Analysis and Design

Methods: Systems constructions and implementation, system operations and support.

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.

Intended Learning Outcomes (ILOs) of the Course

Knowledge	LO 1: Will be able to gather data to analyze and specify requirements of a system.
	LO 2: Will be able to design system components and environments.
	LO 3: Students will be able to build general and detailed models that assist programmers in implementing a system...
	LO 4: Will be able to design a database for storing data and a user interface for data input and output, as well as controls to protect the system and its data..
Skills	Will develop skills on a firm basis for understanding the life cycle of a systems development project.
	Will gain skills on analysis and development techniques required as a team member of a medium-scale information systems development project.
	Will gain skills on the ways in which an analyst's interaction with system sponsors and users play a part in information systems development.
Attitude	Will develop attitude to experience in developing information systems models
	Will create attitude to experience in developing systems project documentation
	Will create positive attitude to an understanding of the object-oriented methods models as covered by the Unified Modeling Language.

Mapping of course ILO and PLO

Learning Outcome (LO) of the Course	Program Learning Outcome (PLO)										
	1	2	3	4	5	6	7	8	9	10	11
ILO1	MJ	MJ	MJ		MJ		MN			MJ	MJ
ILO2		MJ		MJ	MN				MN	MN	MN
ILO3	MJ		MJ	MJ	MJ		MN		MJ		MJ
ILO4	MN	MJ	MN		MJ	MN			MJ	MN	

Contents

SL No	ILO	Topic	Teaching Strategy	Assessment Strategy	Number of Sessions
I	1,2	The Context of Systems Development Project: the context of systems analysis and design methods, information system building blocks, information systems development, project management.	Lecture, Demonstrate analysis.	Q/A, Assignment	2
II	1,3,4	System Analysis Methods: Systems analysis, fact-finding techniques for requirements discovery, modeling system requirements with use cases, data modeling and analysis, information.	Lecture, Problem Example	Q/A, Quiz	3
III	1,3,4	Process modeling, feasibility analysis and the system proposal, object-oriented analysis and modeling using the UML.acyclic graphs.	Lecture, Exercise, Problem Example	Q/A, Quiz	3
V		Midterm Exam			
VI	1,2,3,4	System Design Methods: Systems design, application architecture and modeling. Data base design, output design and prototyping,	Lecture, Exercise,	Q/A, Quiz	4
VII	1,2,3,4	input design and prototyping, user interface design, object-oriented design and modeling using the UML.	Lecture, Exercise,	Q/A, Quiz	4
VIII	2,4	Beyond System Analysis and Design Methods: Systems constructions and implementation, system operations and support	Lecture, Example	Q/A, Quiz	2
Total					24

Teaching Learning Methods

Analyze and solve knowledge-based problems for practical situation
Group discussion
Lecture slides, presentations, audio and video
Analytical and critical thinking approach to understand real life system and models

Assessment Schedule

Assessment 1	Quizzes	Week 4, Week 10
Assessment 2	Assignments	Week 5, Week 11
Assessment 3	Presentation	Week 5, Week 11
Assessment 4	Mid-Term Exam	Week 6
Assessment 5	Final Exam	Week 12

Weights of Assessments

Assessments	%
Mid-Term Exam	30
Final Exam	40
Quizzes	10
Assignments	10
Presentation	10
Total	100

List of References

Course Notes: Follow Lecture notes

Essential Books (Text Books): Systems Analysis and Design with UML Version 2.0: An Object-Oriented Approach, 2nd Edition, by Alan Dennis, Barbara Haley Wixom, David Tegarden.

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

Online Recourses: Use Internet to get documents on specific topics

Facilities Required for Teaching and Learning

Projector, Whiteboard, Internet access from classroom computer, Audio/Visual equipment.

Course Policies and Procedures

- Class attendance: Regular attendances of classes are mandatory and students will be assigned F automatically if he/she misses 6 consecutive classes.
- Late submission of work: Late submission will be followed by penalty, please maintain deadlines.
- Unfair means /plagiarism: Plagiarism will be dealt with severe penalty. Original work is encouraged as they will carry value marks.

Appendix-1: Program Learning Outcome (PLO)

PLO No.	PLO
1.	Engineering Knowledge
2.	Problem Analysis
3.	Design/Development of Solutions
4.	Investigation
5.	Modern Tool Usage
6.	The Engineer and Society
7.	Environment and Sustainability
8.	Ethics
9.	Communication
10.	Individual and Team Work
11.	Life Long Learning
12.	Project Management and Finance

Professional/Generic Skills (Detailed):

1. Engineering Knowledge (T) -Apply knowledge of mathematics, sciences, engineering fundamentals and manufacturing engineering to the solution of complex engineering problems;
2. Problem Analysis (T) – Identify, formulate, research relevant literature and analyze complex engineering problems, and reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences;
3. Design/Development of Solutions (A) –Design solutions, exhibiting innovativeness, for complex

engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, economical, ethical, environmental and sustainability issues.

4. Investigation (D) Conduct investigation into complex problems, displaying creativeness, using research-based knowledge, and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions;
5. Modern Tool Usage (A & D) -Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities, with an understanding of the limitations;
6. The Engineer and Society (ESSE) -Apply reasoning based on contextual knowledge to assess societal, health, safety, legal, cultural, contemporary issues, and the consequent responsibilities relevant to professional engineering practices.
7. Environment and Sustainability (ESSE) -Understand the impact of professional engineering solutions in societal, global, and environmental contexts and demonstrate knowledge of and need for sustainable development.
8. Ethics (ESSE) –Apply professional ethics with moral values and commit to responsibilities and norms of professional engineering code of practices.
9. Communication (S) -Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
10. Individual and Team Work (S) -Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.
11. Life Long Learning (S) -Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
12. Project Management and Finance (S) -Demonstrate knowledge and understanding of engineering management and financial principles and apply these to one's own work, as a member and/or leader in a team, to manage projects in multidisciplinary settings, and identify opportunities of entrepreneurship.

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Course Coordinator/ Teacher

Date:

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Head of the Department

Date: