

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

Course Code: CSE 326 **Course Title:** System Analysis and Design Laboratory **Credit hours:** 1.5

Prerequisites: CSE 115 , CSE 116

Semester: Spring 2019

Total Weeks: 13

Hours/Week: 3

Total Hours: 39

Instructor: Supta Richard Philip

Designation: Senior Lecturer

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Office Hrs: By appointment

Course Details

Course Description

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.

Intended Learning Outcomes (ILOs) of the Course

Knowledge	LO 1: 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.
	LO 2: Will be able to Solve a wide range of problems related to the analysis, design and construction of information systems
	LO 3: Students will be able to make Analysis and Design of systems of small sizes.
	LO 4: Will be able to Be able to present projects.
Skills	Will develop skills on a firm basis for understanding the life cycle of a systems development project.
	Will gain skills on an understanding of the analysis and development techniques required as a team member of a medium-scale information systems development project.
	Will gain skills on planning and undertake a major individual project, prepare and

	deliver coherent and structured verbal and written technical reports
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 Modelling 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	M N				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	Project Study & Survey	Lecture, Demonstrate analysis.	Q/A, Assignment	2
II	1,3,4	Project Planning and Reports Analysis	Lecture, Problem Example	Q/A, Quiz	1
III	1,3,4	Interviews	Lecture, Exercise, Problem Example	Q/A, Quiz	2
V		Midterm Exam			
VI	1,2,3,4	Existing System Analysis.	Lecture, Exercise, Problem Example	Q/A, Quiz	4
VII	1,2,3,4	Requirements Analysis and Planning .	Lecture, Exercise, Problem Solving	Q/A, Quiz	2
VIII	2,4	Proposed System Analysis	Lecture, Example	Q/A, Quiz	2
IX	2,3,4	DFD Design	Lecture, Demonstrate	Q/A, Quiz	2
X	2,3,4	Software & Hardware Design	Lecture, Demonstrate	Q/A, Quiz	2
XI	3,4	Feasibility Analysis & Recovery Analysis	Lecture, Demonstrate	Q/A, Quiz	3

XII	2,4	Evaluation of Proposed System	Lecture, Demonstrate	Q/A, Quiz	2
XIII	1,3,4	Storing and Backup Analysis	Lecture, Demonstrate	Q/A, Quiz	1
XIV	3,4	Future works Analysis	Lecture, Demonstrate	Q/A, Quiz	1
XV		Final Exam			
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): Whitten Bentley: System Analysis & Design Method.

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

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.

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

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Head of the Department

Date:

Date: