



King Saud University
College of Computer and Information Sciences
Department of Computer Science

COURSE SCHEDULE
1445 - 1

Code: CSC 343
Title: System Analysis and Design
Credits: 3 Hours (3-0-1)
Required Course

Academic Year: 1445
Semester: fIRST
Course Coordinator: Dr. Hammami Salah

Code: CSC 343
Title: System Analysis and Design
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Semester: First

1.1. Instructor Contact

Instructor: Dr. Salah Hammami
Office: 2154
e-mail: shammami@ksu.edu.sa
Phone: 4676589

1.2. Course Objectives and Learning Outcomes

1. Course Description

Learn how to apply an engineering approach to computer software analysis, design and development by focusing on topics like life cycle models, software requirements, specification, conceptual model design, detailed design, validation and verification, software architecture, and project management.

2. Course Main Objective

Upon successful completion of this course, you will be able to:

- demonstrate mastery of software engineering knowledge, skills, and professional issues necessary to practice software engineering;
- use software engineering principles;
- compare and contrast software development models;
- create major activities and key deliverables in a software development life cycle during software requirements and analysis, software design, and software testing;
- apply the object-oriented methodology in software engineering to create UML artifacts for software analysis and requirements and software design;
- apply project management concepts in a software engineering environment to manage projects; and
- contribute as a group member in analysis and design projects.

Throughout this course, you will also see learning outcomes in each unit. You can use those learning outcomes to help organize your studies and gauge your progress.

1.3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	Apply key elements and common methods for elicitation and analysis to produce a set of software requirements.	K1
1.2	Use necessary tools for analysis and design activities (process model, diagrams,).	K2
2	Skills :	
2.1	Choose an appropriate method to design the software using a software requirement specification, an accepted design methodology (e.g., structured or object-oriented), and appropriate design notation.	S1
2.2	Use a software testing strategy.	S1
2.3	Work on team and Write project reports.	S3
3	Values:	
3.1	Make ethical professional decisions and practice ethical professional behavior.	V1

1.4. Text Book

Textbook:

- Ian Sommerville, “Software Engineering”. 9 Edition, Addison-Wesley, 2007.
- *Systems Analysis and Design in a Changing World*, John Satzinger, Robert Jackson and Stephen Burd. 5th edition. Thomson Course Technology, 2009 (ISBN-13: 978-1-4239-0228-7)

Recommended Reading:

- *Systems Analysis and Design*, Alan Dennis and Barbara Haley Wixom. John Wiley & Sons, 2000 (ISBN 0-471-24100-8)
- *Essentials of Systems Analysis and Design*, Joseph Valacich, Joey F. George and Jeffrey A. Hoffer. Prentice Hall, 2001 (ISBN 0-13-018373-3)
- *Systems Analysis and Design Methods*, Jeffrey L. Whitten, Lonnie D. Bentley and Kevin C. Dittman. Irwin/McGraw-Hill, 1998 (ISBN 0-256-23826-X)
- *Introduction to Systems Analysis and Design: A Structured Approach*, Penny A. Kendall. Irwin/McGraw-Hill, 1996 (ISBN 0-697-12414-2)

1.5. Tentative Schedule

Week number	Topic	Course Materials	Assignments
Week 1	<ul style="list-style-type: none">- What Systems Analysis- What System Design- Why is it important?- What software engineering is and why it is important;- Answers to key questions that provide an introduction to software engineering;- Ethical and professional issues for software engineers.	Chapter 1: Introduction to System Analysis and Design	
Week 2-3	<ul style="list-style-type: none">- Software process models- Process iteration- Process activities- Computer-aided software engineering	Chapter 2 The Software Processes	Assignment 1
Week 4-5	<ul style="list-style-type: none">- Concepts of user requirements- Concepts of system requirements- Functional and non-functional software requirements- Software requirements document.	Chapter 3: Requirements Specification	
Week 6	<ul style="list-style-type: none">- Software project management and its distinctive characteristics- Main tasks undertaken by project managers- Project planning and the planning process- Different types of Project	Chapter 4: Software Project Management	Midterm
	Mid Term 1		

Week 7-8	<ul style="list-style-type: none"> - Modelling users' tasks using use case diagrams and detailed descriptions of use cases. - Evolutionary approach for building classes - Identifying objects and attributes of classes - Class diagram - Relationships between classes - Object diagrams - Activity Diagram - 	Chapter 5: Object Oriented Analysis using UML Architectural Design	Assignment 2
Week 9	<ul style="list-style-type: none"> - Structure of a software system - Architectural design and its importance - Architectural model that may be used 	Chapter 6: Software Architecture	
Week 10	<ul style="list-style-type: none"> - System testing - Component testing - Test case design 	Chapter 7: Software Testing	
	Final Exam		

1.6. Assessment Methods

Midterm 1	15 %
Midterm 2	15%
Final Exam	40 %
Project & Tut	20 %
Quizzes	10 %

Final:

A comprehensive final examination will be given. It will be a closed book and closed note exam and will cover all course material.

Midterm:

Midterm will be given. It will be a closed book and closed note exam and will cover the studied part of the course.

Quizzes:

In-class quizzes will be given throughout the semester to assess the desired course outcomes.

Homework:

Homework will be assigned and graded. All homework will be given with a strict deadline, and students are required to submit their assignments on or before the deadline.

Project:

Students participate in teams of three or four on developing software systems, including the feasibility study requirements, specification, and design.

1.7. Policies

- ✚ Late submission policy:
 - Maximum 1 late days per assignment/project deliverable
 - Each late day penalized with 10%
 - No subdivision of late days
- ✚ Legal notices on the world-wide web: Read and comply with accompanying legal notices of downloadable material
- ✚ Specify references used in assignments and project
- ✚ Plagiarism and cheating: Will not be tolerated. Please read the policies of the Computer Science Department.