

Course Title:	Web Engineering
Course Code:	SE2308
Program:	Bachelor of Software Engineering
Department:	Information Systems
College:	Computer Science and Information Systems
Institution:	Umm Al-Qura University

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A. Course Identification

1. Credit hours: 3			
2. Course type			
a.	University <input type="checkbox"/>	College <input type="checkbox"/>	Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b.	Required <input checked="" type="checkbox"/>	Elective <input type="checkbox"/>	
3. Level/year at which this course is offered: 6/2			
4. Pre-requisites for this course (if any): Computer Programming 2 (CS 1312)			
5. Co-requisites for this course (if any): None			

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3	100%
2	Blended	0	0
3	E-learning	0	0
4	Distance learning	0	0
5	Other	0	0

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	20
2	Laboratory/Studio	20
3	Tutorial	0
4	Others (specify)	0
	Total	40

B. Course Objectives and Learning Outcomes

1. Course Description

Web Engineering introduces a structured methodology utilized in software engineering to Web development projects. The course addresses the concepts, methods, technologies, and techniques of developing Web sites that collect, organize, and expose information resources. Topics covered include requirements engineering for Web applications, design methods and technologies, interface design, usability of web applications, accessibility, testing, metrics, operation and maintenance of Web applications, security, and project management. Specific technologies covered in this course include client-side (HTML, JavaScript, and CSS) and server-side (ASP.NET).

2. Course Main Objective

The main objective of this course is to examine systematic, disciplined, and quantifiable approaches to developing high-quality, reliable, and usable web applications. The course introduces the methodologies, techniques and tools that support their design, development, evolution, and evaluation.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	Describe the architecture of client-side and server-side web applications	K1
1.2	Identify the appropriate programming environment for developing dynamic client-side and server-side web applications	K2
1.3	Identify the tools needed to create dynamic client-side and server-side web applications	K2
2	Skills:	
2.1	Plan, develop, debug, and implement interactive client-side and server-side web applications.	S1
2.2	Evaluate and validate web applications for conformance to the latest W3C markup standards.	S2
2.3	Analyze and evaluate web applications for conformance to section 508 and W3C accessibility standards.	S3
3	Values:	
3.1	Choose between server-side and client-side programming, depending on the task to be performed.	V1

C. Course Content

No	List of Topics	Contact Hours
1	An Introduction to Web Engineering Requirements Engineering for Web Applications	3
2	Modeling Web Applications Web Application Architectures	3
3	Technology-aware Web Application Design	3
4	Usability of Web Applications	3
5	Technologies for Web Applications	3
6	Web Project Management	3
7	The Web Application Development Process	3
8	Security for Web Applications	3
9	Testing of Web Applications	3
10	Operation & Maintenance of Web Applications Introduction to AJAX	3
Total		30

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge and Understanding		
1.1	Describe the architecture of client-side and server-side web applications	Lecture, exercise	Quiz, exams, assignments
1.2	Identify the appropriate programming environment for developing dynamic client-side and server-side web applications	Lecture, exercise	Quiz, exams, assignments
1.3	Identify the tools needed to create dynamic client-side and server-side web applications	Lecture, exercise	Quiz, exams, assignments
2.0	Skills		
2.1	Plan, develop, debug, and implement interactive client-side and server-side web applications.	Lecture, Group discussion, tutorials	Exams, assignments, project
2.2	Evaluate and validate web applications for conformance to the latest W3C markup standards.	Lecture, Group discussion, tutorials	Exams, assignments, project
1.3	Analyze and evaluate web applications for conformance to section 508 and W3C accessibility standards.	Lecture, Group discussion, tutorials	Exams, assignments, project
3.0	Values		
3.1	Choose between server-side and client-side programming, depending on the task to be performed.	Project	Assignment, project

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignments or Quizzes	3,5, 7,9	20%
2	Midterm Exam	6	20%
3	Project	10	10%
4	Final Exam	11	50%
5			
6			
7			
8			

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Web Engineering: A Practitioner's Approach by Roger Pressman and David Lowe, McGraw-Hill, 2009.
Essential References Materials	HTML and CSS: Comprehensive 7th edition, Denise M. Woods and William J. Dorin. Publisher: Cengage Learning; (2012) ISBN-10: 1133526144
Electronic Materials	Internet & World Wide Web How to Program, 5/e Paul J. Deitel, Harvey M. Deitel, Abbey Deitel, Pearson Education 2012.
Other Learning Materials	Lecture Notes. Available online.

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classroom
Technology Resources (AV, data show, Smart Board, software, etc.)	Data Show, and Smart Board.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Attached

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effective teaching, course contributions to enhancement of knowledge and skills for students	Students	Survey (Indirect)
Overall quality of course periodically	Course committee	Annual report (Indirect)
Overall quality and effectiveness of course contents, ILOs achievement, success rate	Program Coordinator	Survey (Indirect)
Theoretical exams, projects, Assignments	Instructor	Overall assessments (Direct)

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Information systems council
Reference No.	Meeting number 20, academic year 1443H
Date	29 May 2022