Course Specification

(Bachelor)

Course Title:	eCommerce Systems
Course Code:	SE4707
Program:	BSc in Software Engineering
Department:	Software Engineering
College:	College of Computing
Institution:	Umm Al Qura University
Version:	1.0
Last Revision Date:	22/04/2025

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (3)					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☐ Required		☒ Elective		
3. Level/year at which this course is offered: (3rd year/ 5th or 6th level) or (4th year/8th level)					
4. Course General Description:					
eCommerce Systems explores the development, implementation, and management of electronic commerce platforms from a software engineering perspective. The course focuses on modern eCommerce architectures, system requirements, design and implementation techniques, and best practices for ensuring usability, scalability, security, and effective stakeholder engagement.					
5. Pre-requirements for this course (if any)**:**					
SE3102 - Software Design and Architecture					
6. Co-requisites for this course (if any)**:**					
N/A					
7. Course Main Objective(s):					
Upon completing this unit, students will be able to: 1. Understand eCommerce Principles: Familiarize yourself with the key concepts and trends in the digital economy. 2. Develop Technical Skills: Learn to design and maintain scalable and secure eCommerce systems using modern practices. 3. Ensure Security and Ethics: Recognize the ethical considerations and security challenges associated with eCommerce. 4. Engage Stakeholders: Collaborate effectively with stakeholders to ensure successful deployment of eCommerce systems.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	45	100%
2	E-learning	0	0
3	Hybrid	0	0

No	Mode of Instruction	Contact Hours	Percentage
	• Traditional classroom • E-learning		
4	Distance learning	0	0

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	45
2.	**Laboratory/Studio**	0
3.	**Field**	0
4.	**Tutorial**	0
5.	**Others (specify)**	0
Total		45

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Understand the foundational principles, trends, and challenges of eCommerce systems.	K1	Lectures, Group Discussions	Quizzes, Exams
1.2	Analyze and define business and technical requirements for eCommerce systems.	K2	Exercises, Lectures	Case Study Analysis, Group Projects
2.0	**Skills**			
2.1	Design and implement scalable and secure eCommerce systems using modern software engineering tools and practices.	S1	Project-Based Learning	Projects, Assignments
2.2	Evaluate and validate eCommerce systems for functionality, performance, and security.	S3	Tool Demonstrations	Exercises, Project
3.0	**Values, autonomy, and responsibility**			

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
3.1	Apply ethical principles and address security challenges in eCommerce systems development.	V1	Ethics Case Studies	Scenario-Based Assignments
3.2	Collaborate with stakeholders to ensure alignment of eCommerce systems with business objectives and user needs.	V2	Projects	Group Projects And Presentations

C. Course Content

No	List of Topics	Contact Hours
1.	**Introduction to eCommerce Systems** • The importance of eCommerce in the digital economy. • Historical evolution and future trends in eCommerce.	**3**
2.	**Requirement Elicitation for eCommerce** • Techniques for identifying user and business requirements. • Stakeholder analysis and modeling.	**6**
3.	**eCommerce System Design** • Architecture design patterns for eCommerce (e.g., microservices, headless commerce). • User interface and user experience (UI/UX) design principles.	**6**
4.	**Security in eCommerce** • Secure payment systems and data encryption techniques. • Risk management and fraud prevention.	**6**
5.	**eCommerce Implementation Techniques** • Choosing platforms, frameworks, and tools for development. • Integration with third-party APIs (e.g., payment gateways, shipping systems).	**6**
6.	**Testing and Validation** • Performance testing for high traffic and load conditions. • Ensuring accessibility and compliance with standards (e.g., WCAG, GDPR).	**6**
7.	**Stakeholder Engagement and Transition** • Training stakeholders for system adoption. • Continuous feedback and improvement.	**6**
8.	**eCommerce System Maintenance and Evolution** • Monitoring and updating systems for security, performance, and new requirements.	**6**

	• Incorporating new technologies like AI, blockchain, and IoT.	
Total		**45**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	2-14	15
2.	Projects	2-14	15
3.	Assignments	2-14	10
4.	Mid Term	7	20
5.	Final Exam	16-17	40

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	• Laudon, K. C., & Traver, C. G. (2023). *E-commerce 2023–2024: Business. Technology. Society.* (18th ed.). Pearson. ISBN 978-1292449722. • Larsson, T. (2016). *Ecommerce Evolved: The Essential Playbook to Build, Grow & Scale a Successful Ecommerce Business*. CreateSpace Independent Publishing Platform. ISBN 978-1534619340.
Supportive References	• Ahmed, R. (2021). *Full stack web development for beginners: Learn ecommerce web development using HTML5, CSS3, Bootstrap, JavaScript, MySQL, and PHP*. Independently Published. ISBN 979-8738951268.
Electronic Materials	
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom

Items	Resources
Technology equipment (projector, smart board, software)	Projector
Other equipment (depending on the nature of the specialty)	N/A

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Direct, Indirect
Effectiveness of Students assessment	Faculty, Peer reviewer	Direct, Indirect
Quality of learning resources	Faculty, Course coordinator	Direct, Indirect
The extent to which CLOs have been achieved	Course coordinator, Program management committee	Direct
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**SOFTWARE ENGINEERING DEPARTMENT COUNCIL**
REFERENCE NO.	**THE 17TH MEETING FOR THE ACADEMIC YEAR 1446H**
DATE	**22/04/2025**