Course Specifications

Course Title:	Graduation Project 2 for Computer Science
Course Code:	**ICS 420**
Program:	**B.Sc.**
Department:	**Computer Science**
College:	**College of Science Al Zulfi**
Institution:	**Majmaah University**

Table of Contents

A. Course Identification

1. Credit hours:
2. Course type **a.** University ☐ College ☐ Department ☐ Others ☐ **b.** Required ☐ Elective ☐
3. Level/year at which this course is offered: 10th
4. Pre-requisites for this course (if any)**: Project (1) – ICS 410**
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**		
2	**Blended**	6	10 %
3	**E-learning**	6	10 %
4	**Correspondence**	42	70 %
5	**Other**	12	10 %

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture (Discussion with Students)**	18
2	**Laboratory/Studio**	30
3	**Tutorial**	6
4	**Others** (specify): Self learning	6
	Total	60
Other Learning Hours*		
1	**Study**	30
2	**Assignments (Task to complete in the concerned week)**	20
3	**Library**	20
4	**Projects/Research Essays/Theses**	30
5	**Others** (specify)	
	Total	100

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description: In Graduation Project 2, each group will continue developing their software systems started in ICS 410. The students are supposed to apply design and engineering skills in the accomplishment of a single goal. In this context the skills mentioned may be in the general area of design and engineering in its broadest sense, or may be very specifically related to particular tools. At the end of the semester, each group must submit a final report, which documents completely the information system from the problem definition phase to the implementation phase and contains a user manual the information system.

2. Course Main Objective: This course is a real -life like experience where students team up to solve a real-world systems related problem by applying their concepts and software engineering approaches.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge:**	
1.1		
1.2		
1.3		
1.4		
2	**Skills :**	
2.1	Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.	b2
2.2	Identify and analyze user needs and consider them during the selection, integration, and administration of computer-based systems.	b3
2.3		
2...		
3	**Competence:**	
3.1	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles	c1
3.2	Communicate effectively with diverse audiences the technical information that is consistent with the intended audience and purpose.	c3
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Feasibility study: To produce a feasibility study document that evaluates the costs and benefits of the proposed computer based application.	6
2	Planning and requirement analysis and specification: To produce an SRS document identifying the qualities required of the application, in terms of functionality, performance, ease of use, portability, and so on	9
3	Design and Specification: To produce an document to transform the	9

	requirements specified in the document into a structure that is suitable for implementation in some programming language	
4	Coding, Module Testing, Integration and System Testing: The output of the coding and module testing phase is an implemented and tested collection of modules. During the integration and system testing phase, the modules are integrated in a planned manner. The objective of system testing is to determine whether the software system performs per the requirements mentioned in the document	18
5	Delivery and Making Corrective Maintenance: The system is distributed to the users. Corrective maintenance means repairing processing or performance failures or making changes because of previously uncorrected problems.	3
...		
Total		45

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**		
1.1	Learn new tools and technologies and understand of best practices and standards and their application	Meetings with supervisor, Group Discussions.	Presentations, Report Writing, Demonstrations.
2.0	**Skills**		
2.1	Design, implement, develop and evaluate the computer-based system of the project to meet desired needs	Meetings with supervisor, Group Discussions	Presentations, Report Writing, Demonstrations.
2.2	Use and apply current technical concepts and practices in the core information technologies of human computer interaction, information management, programming, networking, web systems and technologies.	Meetings with supervisor, Group Discussions	Presentations, Report Writing, Demonstrations.
2.3	Integrate IT-based solutions into the user environment effectively.	Meetings with supervisor, Group Discussions	Presentations, Report Writing, Demonstrations.
…			
3.0	**Competence**		
3.1	Use current techniques, skills, and tools necessary for computing practice.	Meetings with supervisor, Group Discussions	Presentations, Report Writing, Demonstrations.
3.2	Function effectively on teams to accomplish a common goal and communicate effectively with a range of audiences.	Meetings with supervisor, Group Discussions	Presentations, Report Writing, Demonstrations.
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Feasibility study: To produce a feasibility study document that evaluates the costs and benefits of the proposed computer based application.	2	5 %
2	Planning and requirement analysis and specification: To produce an SRS document identifying the qualities required of the application, in terms of functionality, performance, ease of use, portability, and so on	٣	10 %
3	Design and Specification: To produce an document to transform the requirements specified in the document into a structure that is suitable for implementation in some programming language	٣	10 %
4	Coding, Module Testing, Integration and System Testing: The output of the coding and module testing phase is an implemented and tested collection of modules. During the integration and system testing phase, the modules are integrated in a planned manner. The objective of system testing is to determine whether the software system performs per the requirements mentioned in the document	4	15 %
5	Delivery and Making Corrective Maintenance: The system is distributed to the users. Corrective maintenance means repairing processing or performance failures or making changes because of previously uncorrected problems.	١	10 %
6	Final submission of the project	١	10 %
7	Presentation to the projects committee for arbitration	١	40 %
٨	Total	15	100 %

***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	1- Modern System Analysis and Design, Jeffery Hoffer, Joey George. 2- Software Engineering a Practitioner's Approach by Roger S. Pressman
Essential References Materials	Analysis and Design of Information Systems by Langer, Arthur M.
Electronic Materials	Determines as the course is going on.
Other Learning Materials	Videos and presentations are available with instructor

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms and Labs as those that are available at college of science Az Zulfi
Technology Resources (AV, data show, Smart Board, software, etc.)	Smart Board and required software
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	N/A

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods

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	
Reference No.	
Date	