Course Specification
(Bachelor)

Course Title:	Graduation Project 2
Course Code:	462-CCN-3
Program: :	Bachelor of Science in Computer Networks
Department:	Networks and Communications Engineering
College: :	Computer Science and Information Systems
Institution:	Najran University
Version:	1.0
Last Revision Date:	20 Feb 2024

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: (Level 8 / Year 4)					
4. Course general Description:					
Graduation Project-2 will allow the students to use their acquired knowledge throughout the program to implement the design proposed in Graduation Project-1. It will also assist students to perform testing, to apply appropriate error detection and correction techniques and help students to evaluate their system/software. Students will be able to work individually as well as in a team. Students will be guided to maintain ethical issues, and documentation formats, develop presentation and communication skills, use references and check plagiarism. Finally, students will produce a runnable software/developed system in real time along with the full version of the project report.					
5. Pre-requirements for this course (if any)**:**					
461CCN-3					
6. Co-requisites for this course (if any)**:**					
No					
7. Course Main Objective(s):					
By the end of this course, the students are expected to be able to : 1. Plan the development, testing and maintenance activities. 2. Apply core knowledge areas of computer science to implement the project 3. Use modern tools and technologies to implement the project. 4. Evaluate the system using testing concepts and techniques. 5. Demonstrate his/her ability to work independently and in a team 6. Demonstrate his/her ability to communicate effectively. 7. Commit to professional, ethical, legal, security and social issues and responsibilities throughout project work.					

Produce a complete report of the project work.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	75	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures** [2 contact hours × 15 weeks]	30
2.	**Laboratory/Studio** [2 contact hours × 15 weeks]	30
3.	**Field**	
4.	**Tutorial** [1 contact hour × 15 weeks]	15
5.	**Others (specify)**	
Total		75

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

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Apply core knowledge areas of computer networks for the implementation of the project	K1, K2	Class lectures, working with the team, reading about topic	Presentations, Reports
1.2				

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
...				
2.0	**Skills**			
2.1	Plan the development, testing and maintenance activities	S1	Class Lectures, working with the team, reading about topic	Presentations, Reports
2.2	Use modern tools and technologies for the implementation of the project	S2, S3	Class Lectures, working with the team, reading about topic	Presentations, Reports
2.3	Implement the project based on the design in project 1	S2, S5	Class Lectures, working with the team, reading about topic	Presentations, Reports
2.4	Evaluate the system using testing concepts and techniques	S4	Class Lectures, working with the team, reading about topic.	Presentations, Reports
3.0	**Values, autonomy, and responsibility**			
3.1	Demonstrate an ability to work independently and in a team	V1	Class Lectures, working with the team, reading about topic	Presentations, Reports
3.2	Produce a complete report of the project work.	V2	Reviews, Feedback	Final Report
3.3	Commit to professional, ethical, legal, security and social issues and responsibilities	V3	Class Lectures, working with the team, reading about the topic	Presentations, Reports
3.4	Demonstrate an ability to communicate effectively	V2	Class Lectures, working with the team, reading about the topic	Presentations, Reports

C. Course Content

No	List of Topics	Contact Hours
1.	Review of Project-1 Design, Review P2 sample work	5
2.	Project 2 planning and schedule (break down work, phases, timetable etc.)	5
3.	Computer networks analysis, design and implementation review, networking programmability review	10
4.	Configuring computer networks (implementation) best practices	10
5.	Introduction – Introduction, P2 planning, link to P1 design, documentation	10
6.	Implementation – Back-end implementation, testing, documentation	10
7.	Implementation – Front-end implementation, testing, documentation	10
8.	Implementation – Middle Tier implementation, testing, documentation	5
9.	Testing – Function and system testing, documentation	5
10.	Conclusion and Future Work	5
Total		75

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Presentation 1 (By supervisor)	4th week	12%
2.	Presentation 2 (By supervisor)	8th week	12%
3.	Final Presentation (By examiners)	14^{th} to 16^{th} weeks	25%
4.	Final Report (By examiners)	13^{th} to 15^{th} weeks	25%
5.	Task Assignments (By supervisor)	2^{nd} -13^{th} week	26%
6.	Total		100

*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	1. Information Technology Project Management, Kathy Schwalbe, latest edition. 2. Modern System Analysis & Design- Jeffrey Hoffer, Joey George, Joseph Valacich, latest edition, Pearson 3. B.A. Forouzan, Data Communications and Networking, latest edition, McGraw–Hill 4. Electronic Commerce 2010, A Managerial Perspective, Prentice Hall, (latest edition). Efraim Turban, Jae Lee, David King and Michel Chung 5. Ethical and Social Issues in the Information Age, Joseph M. Kizza Springer; latest Edition. Harpreet Singh, (Implementing Cisco Networking Solutions: Configure, implement, and manage complex network designs 1st Edition, Kindle Edition), Packt Publishing, 2017.
Supportive References	(Journals, Reports, etc.)
Electronic Materials	Web Sites, Facebook, Twitter, etc.
Other Learning Materials	Computer-based programs/CDs, professional standards or regulations and software.

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom, and the instructor may ask for laboratory if needed.
Technology equipment (projector, smart board, software)	Data show and the instructor may ask for software if needed.
Other equipment (depending on the nature of the specialty)	Depends on the project requirements.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect
Effectiveness of Students assessment	Students	Indirect
Quality of learning resources	Instructor, Students	Indirect

Assessment Areas/Issues	Assessor	Assessment Methods
The extent to which CLOs have been achieved	Instructor, Examiners	Direct
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	DEPARTMENT COUNCIL
REFERENCE NO.	**14450824-0482-00014**
DATE	**5/3/2024**