



Course Specification

DIPLOMA

Course Title: Graduation Project

Course Code: APRT3215

Program: Renewable energy technologies

Department: Diploma Department

College: The Applied College

Institution: Umm Al-Qura University

Version: 1

Last Revision Date: 20 February 2025



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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: (4th Level/ 2nd Year)

4. Course General Description:

1. Course Description

The graduation project aims to let students develop projects that demonstrate their intellectual, technical and creative abilities. Students develop the projects under the direction and supervision of faculty members. Moreover, students gain lifelong learning skills and interface to real life applications. The main practical skills are related to renewable energy development processes. Specifically, students should practice project management, system restriction, system analysis and design, maintenance implementation and testing, systems development documentation and presentation, and project demonstration.

5. Pre-requirements for this course (if any):

6. Co-requisites for this course (if any):

7. Course Main Objective(s):

Course Main Objective

The main objectives are as follows:

1. Show a thorough understanding of relevant theories, methods, and tools.
2. Use hands-on techniques to design, troubleshoot, and implement real-world solutions.
3. Conduct structured investigations, evaluate data, and draw evidence-based conclusions.
4. Identify challenges, propose creative solutions, and refine approaches through iteration.
5. Collaborate effectively, manage responsibilities, and communicate findings clearly.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3	100%





No	Mode of Instruction	Contact Hours	Percentage
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> Traditional classroom E-learning 		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	
2.	Laboratory/ <u>Studio</u>	
3.	Field	
4.	Tutorial	
5.	Others (specify) Graduation Project	45
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	Comprehensive grasp of how solar, wind, hydro, and other renewable sources generate and store energy.	K1	Graduation Project: reports and presentation	Graduation Project
1.2	Insights into designing, installing, and maintaining renewable energy systems, ensuring optimal efficiency.	K2		
1.3	Appreciation for how renewable technologies reduce	K3		





Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
	carbon emissions and support long-term environmental health.			
1.4	Awareness of local and international policies, certifications, and safety standards guiding renewable energy projects.	K4		
1.5	Understanding cost-benefit analysis, return on investment, and market factors influencing renewable energy adoption.	K4		
2.0	Skills			
2.1	Creating and simulating renewable energy system layouts, selecting appropriate components, and ensuring optimal performance.	S1		
2.2	Collecting system data, interpreting results, and using analytical tools to track efficiency, output, and potential areas for improvement.	S2		
2.3	Structuring project timelines, delegating tasks, and coordinating resources for on-time and within-budget completion.	S3		
2.4	Identifying project hurdles (e.g., technical failures, regulatory constraints), formulating solutions, and adapting plans accordingly.	S4		
			Graduation Project: reports and presentation	Graduation Project





Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
2.5	Working effectively in teams, presenting findings clearly to stakeholders, and documenting progress throughout the project.	S5		
3.0	Values, autonomy, and responsibility			
3.1	Commit to eco-friendly solutions and responsible resource use, recognizing the long-term environmental impact of project decisions.	V1	Minor project report and presentation	Minor project report and presentation
3.2	Uphold honesty in research, data reporting, and teamwork, fostering trust and credibility in the field.	V2		
3.3	Take ownership of tasks and project outcomes, demonstrating self-directed learning and responsible decision-making.	V3		
3.4	Value diverse perspectives, communicate openly, and share knowledge to ensure mutual growth and project success.	V4		

C. Course Content

No	List of Topics	Contact Hours
1	Graduation Project	45
Total		45



D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1	Graduation Project	15	%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	
Supportive References	
Electronic Materials	
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms
Technology equipment (projector, smart board, software)	Data show
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Faculty	Direct (project, HW, Quiz, midterm and final exam)
Effectiveness of Students assessment	Students	Indirect (Student Survey)
Quality of learning resources	Program Coordinator	Direct analysis
The extent to which CLOs have been achieved	Program Coordinator	Direct analysis
Other		

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

Assessment Methods (Direct, Indirect)





G. Specification Approval

COUNCIL /COMMITTEE	Umm Al-Qura University Council
REFERENCE NO.	851141114462/190394
DATE	22/11/1446

