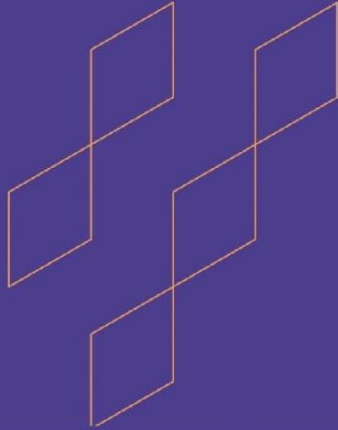




Course Specification

(Postgraduate Programs)

Course Title: Project
Course Code: 2202- 588
Program: Master in Electrical Engineering
Department: Electrical Engineering
College: College of Engineering
Institution: King Faisal University
Version: 1
Last Revision Date: 17 th April, 2025

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A. General information about the course:

1. Course Identification:

1. Credit hours: (6)				
6 CH				
2. Course type				
A.	☐ University	☐ College	☒ Department	☐ Track
B.	☒ Required		☐ Elective	
3. Level/year at which this course is offered: Level 4/2nd year				
4. Course General Description:				
The Project enables students in the non-thesis track to extend their knowledge beyond structured coursework by undertaking an independent, supervised research or applied engineering project in electrical engineering. Students are required to identify and investigate a focused engineering problem through the application of appropriate research methodologies, engineering principles, and practical constraints, demonstrating proficiency in analysis, modeling, simulation, and validation at a graduate level. The course emphasizes professional engineering practice, original investigation, and effective technical communication, with a scope and depth appropriate for a research project. Successful completion of the course requires the preparation of a structured technical report, the development of a research poster, and the delivery of an oral seminar presentation for evaluation by an internal assessment committee.				
5. Pre-requirements for this course (if any):				
Students are allowed to register for the project after finishing 6 CH from core courses and 9 CH electives.				
6. CO-requirements for this course (if any):				
None				
7. Course Main Objective(s):				
• Apply knowledge and skills acquired from prior electrical engineering coursework to the analysis, design, and investigation of a focused engineering problem. • Familiarize students with research and engineering methodologies appropriate for graduate-level electrical engineering projects.				

- Develop the ability to conduct a focused original investigation and critically analyze engineering problems within defined scope and constraints.
- Enhance technical communication skills and develop professional organization, planning, and project management abilities.
- Emphasize the role of key engineering considerations, including economic feasibility, reliability, performance, safety, sustainability, ethical responsibility, and societal impact.
- Develop the ability to prepare a professional, well-structured technical report in accordance with academic and industry standards.
- Build proficiency in the use of engineering and research tools commonly employed in electrical engineering, including simulation and data analysis software, technical documentation systems, and reference management tools.

2. Teaching Mode: (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	90	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.	Laboratory/Studio	60
3.	Field	
4.	Tutorial	
5.	Others (specify): Supervisor Meetings	30
	Total	90

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	Demonstrate advanced knowledge of electrical engineering theories, principles, and domain-specific concepts relevant to the selected research or applied engineering project.	K1	Independent study, guided reading, supervisor meetings	Project report
1.2	Demonstrate in-depth understanding of current research trends, technical literature, and engineering standards related to the defined project problem.	K1	Independent study, guided reading, supervisor meetings	Project report
1.3	Demonstrate comprehensive understanding of the engineering context of the project, including governing assumptions, limitations, and interdisciplinary considerations affecting problem formulation and interpretation of results.	K1	Independent study, guided reading, supervisor meetings	Project report
2.0	Skills			
2.1	Apply appropriate analytical, computational, and/or experimental techniques to investigate a defined electrical engineering problem.	S1	Laboratory work, simulations, supervised project activities	Project report, supervisor evaluation
2.2	Develop and implement an engineering solution while considering relevant technical constraints and performance requirements within the project scope.	S1, S2	Guided implementation, technical feedback, supervisor meetings	Project report, seminar presentation





Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
2.3	Communicate project objectives, methods, and results effectively through professional written and oral presentations.	S1, S3	Presentation, draft reviews	Project report, seminar presentation, poster
3.0 Values, autonomy, and responsibility				
3.1	Demonstrate ethical conduct, academic integrity, and professional responsibility in the execution and reporting of the project.	V2	Ethics guidance, supervisor oversight	Supervisor evaluation, project report
3.2	Work independently and responsibly to plan, manage, and complete a graduate-level engineering project within a defined timeframe.	V1, V3	Independent project work, milestone tracking, supervisor meetings	Supervisor evaluation, project completion

C. Course Content:

No	List of Topics	Contact Hours
1.	Project orientation and definition of objectives	6
2.	Targeted literature review and background study	6
3.	Selection of engineering problem and scope limitation	6
4.	Review of relevant engineering standards and constraints	6
5.	Selection of appropriate analysis, simulation, or experimental tools	6
6.	Applied modeling or preliminary experimental setup	6
7.	Execution of the engineering project	12
8.	Data collection and processing	6
9.	Evaluation of results and performance assessment	6
10.	Engineering judgment and interpretation of findings	6
11.	Technical report structure and documentation guidelines	6
12.	Preparation of project report drafts	6
13.	Seminar presentation preparation	6
14.	Oral seminar presentation and discussion	6
Total		90





D. Students Assessment Activities:

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Discussions, Oral Presentations, Supervisor Meetings	Weekly	-
2.	Project Seminar (report submission, oral presentation, and poster)	Dept. and College Council	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	Literature Review from Scientific Databases.
Supportive References	-
Electronic Materials	-
Other Learning Materials	-

2. Educational and Research Facilities and Equipment Required:

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	• Seminar room • Electrical Machines & Power Systems Lab • Communications & Signal Processing Lab • Control Systems & Robotics Lab • Electronics & Microelectronics Lab • Renewable Energy Systems Lab • Digital Logic & Embedded Systems Lab
Technology equipment (Projector, smart board, software)	• Computing facilities • Presentation systems (projectors, smart boards) • Engineering and research software • Technical documentation tools • Digital libraries and research databases
Other equipment (Depending on the nature of the specialty)	NA





F. Assessment of Course Quality:

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect (Course Evaluation Survey)
Effectiveness of students' assessment	- Project Advisor - Evaluation Panel	Direct (Advisor assessment using a structured rubric for progress, technical work, research practice, and overall performance) Direct (Evaluation Panel assessment using standardized rubrics for the final report and presentation)
Quality of learning resources	- Students - Project Advisor - Evaluation Panel	Indirect (Course Evaluation Survey) Indirect (Advisor feedback on adequacy of resources required to execute the project) Indirect (Panel feedback on adequacy of resources as inferred from the quality and feasibility of deliverables)
The extent to which CLOs have been achieved	- Students - Project Advisor - Evaluation Panel	Indirect (Course Evaluation Survey) Direct (Advisor rubric-mapped assessment of CLOs through milestone performance, progress deliverables, and research conduct) Direct (Panel rubric-mapped assessment of CLOs through the final report and presentation)
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval Data:

COUNCIL /COMMITTEE	EE DEPARTMENT QUALITY COMMITTEE
REFERENCE NO.	MEETING # 10
DATE	APRIL 19, 2025

