Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program Guide

2024-2025

University name: Anbar University
College name: Engineering
Scientific Department: Electrical Engineering
Academic or Professional Program Name: Bachelor's Degree in Electrical Engineering
Final Certificate Name: Bachelor of Science in Electrical Engineering
Academic System: courses
Description Preparation Date : 14/10/2024
File filling date: 14/10/2024

Signature:
Dr. Maath Jasem Mahammad
Head of Department
Date: :21/10/2024

Signature: M. A. Ahmed
Dr. Mohamed Abdel Ahmed
Scientific Associate
Date: : 21/10/2024

The file is checked by:
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department: Dr. Haitham Kamel Daoud
Date: : 21/10/2024
Signature: H. K. Dawood

Approval of the Dean
Professor .Dr. Ameer Abdul Rahman Hilal

جامعة الانبار
كلية الهندسة
قسم الهندسة الكهربائية

University of Anbar College of Engineering

UNIVERSITY OF ANBAR COLLEGE OF ENGINEERING Scientific Affairs And Graduate Studies

الممسوحة ضوئيا بـ CamScanner

1. Program Vision

The vision of the department is to be pioneer locally and globally in the continuous, high, and university education, in addition to the development through various outcomes of the department.

2. Program Mission

The mission of the department of electrical engineering takes shape providing variety of accredited and high-quality academic programs, graduating engineers with high skills that qualify them to compete locally and globally, providing appropriate environment for the staff members and graduate students to do outstanding research activities and attaining the collaboration between the department and other foundations in the labor market.

3. Program Objectives

The department of electrical engineering strives to attain the following objectives:

- Maintaining the quality of the academic programs and improving them through evaluation and continuous development.
- Updating the references and textbooks continuously.
- Updating the laboratories and establishing new laboratories whenever needed.
- Expanding students' knowledge through scientific courses and field visits.
- Maintaining the professional progression of the faculty by participating in conferences and specialized trainings.

4. Program Accreditation

N/A

5. Other external influences

N/A

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	8	14	11%	
College Requirements	12	33	25%	
Department Requirements	30	63	48%	Mandatory
Summer Training	3	20	15%	Elective
Other				

* This can include notes about whether the course is basic or optional.

7. Program Description

			Credit hours and units	
Year /Level	*course code*	*course name*	*theoretical*	*experimental*
1	UOA001	Arabic Language	2	-
1	ENG003	Calculus I	3	-
1	ENG004	Calculus II	3	-
1	ENG002	Chemistry	3	2
1	UOA007	Computer Science	1	2
1	ELE002	Digital Techniques I	2	2
1	ENG007	Engineering Drawing	2	2
1	ENG006	Engineering Mechanics (Static)	3	-
1	UOA003	English Language	2	-
1	ENG005	Fundamentals of Electrical Engineering I	2	2
1	ELE001	Fundamentals of Electrical Engineering II	3	2
1	UOA005	Human Rights and Democracy	2	-
1	ENG001	Physics	3	2
2	UOA002	Arabic Language II	2	-
2	ENG008	Calculus III	3	-
2	ENG009	Calculus IV	3	-
2	UOA008	Computer Science II	1	2
2	UOA006	Crimes of the Baath Regime in Iraq	2	-
2	ELE015	DC Machines I	2	2
2	ELE016	DC Machines II	2	2
2	ELE040	Digital Techniques II	3	-
2	ELE003	Electric Circuits I	3	-
2	ELE004	Electric Circuits II	3	-
2	ELE005	Electromagnetic Fields I	2	-
2	ELE006	Electromagnetic Fields II	2	-
2	ENG010	Engineering Statistics	3	-
2	UOA004	English Language II	2	-
2	ELE007	Fundamentals of Electronics I	2	2
2	ELE008	Fundamentals of Electronics II	2	2
3	EE3324	AC Machines I	2	-
3	EE3325	AC Machines II	2	-
3	EE3328	Analog Communications and Noise	2	-
3	EE3323	Computer Networks	3	-
3	EE2312	Computer Programming	2	-
3	EE3329	Digital Communications	2	-
3	EE3321	EE Lab 31	2	4
3	EE3322	EE Lab 32	2	4
3	EE3317	Electric Power I	2	-
3	EE3318	Electric Power II	2	-
3	EE3326	Electronics I	3	-

7. Program Description

			Credit hours and units	
Year /Level	*course code*	*course name*	*theoretical*	*experimental*
3	EE3327	Electronics II	3	-
3	EE3210	Engineering Economy	3	-
3	EE3107	English Language III	2	-
3	EE3319	Signals and Systems I	2	-
3	EE3320	Signals and Systems II	2	-
4	EE4335	Advanced Communication Systems	2	-
4	EE4332	Control Theory I	2	-
4	EE4333	Control Theory II	2	-
4	EE4343	Digital Electronics	2	-
4	EE4330	EE Lab 41	1	2
4	EE4331	EE Lab 42	1	2
4	EE4336	Electric Power III	2	-
4	EE3211	Engineering Numerical Methods	3	2
4	EE4107	English Language IV	2	-
4	EE4338	Final Year Project I	3	-
4	EE4339	Final Year Project II	3	-
4	EE4334	Information Theory	2	-
4	EE4108	Management and Leadership Skills	2	-
4	EE4337	Power Electronics	2	-
4	EE4348	Power System Analysis	2	-
4	EE4345	Programmable Logic Controller (PLC)	2	-

8. Expected learning outcomes of the program

Knowledge	
The ability to understand the fundamentals of electrical engineering: (Physics, Mathematics, and Electrical Circuits).	Electronics: Designing and analyzing digital and analog electronic circuits.
Control Systems: Understanding and applying control theories in industrial processes.	Power Systems: Studying the generation, transmission, and distribution of electrical power, as well as energy efficiency.
Communications: Studying theories and systems of wired and wireless communications.	Computer: Programming skills and applying computers to solve engineering problems.
Skills	
Problem-Solving: The ability to analyze complex engineering problems and develop innovative solutions.	Design: Designing electronic circuits, electrical systems, and electrical products.

Modeling and Simulation: Using computer software to model and analyze electrical systems.	Measurement and Testing: Conducting experiments and measuring performance in electrical systems.
Teamwork: The ability to work effectively within a multidisciplinary team.	Effective Communication: Clearly conveying technical ideas and writing technical reports.
Ethics	
Professional Ethics: Adhering to the highest ethical standards in professional practice.	Innovation: Encouraging creative thinking and developing new solutions.
Continuous Learning: Awareness of the importance of keeping up with ongoing technological advancements.	Social Responsibility: Understanding the environmental and societal impacts of engineering work.

9. Teaching and Learning Strategies

Theoretical Learning:
- Interactive Lectures: Utilizing diverse teaching methods such as group discussions, problem-solving, and case studies of real-world scenarios.

Practical Application:
- Advanced Laboratories: Equipping labs with the latest devices and equipment to enable students to apply theoretical knowledge.

Graduation Projects:
- Encouraging students to execute practical graduation projects that address real engineering problems.

Industrial Visits:
- Organizing visits to factories and engineering companies to familiarize students with real-world work environments.

Group Projects:
- Dividing students into teams to work on engineering projects that enhance their problem-solving and teamwork skills.

Scientific Research:
- Conducting research on renewable energy technologies or developing new algorithms to improve the performance of electrical systems.

10. Evaluation methods

The Bachelor's Program in Electrical Engineering Science employs a variety of methods to assess student performance, including:

1. Theoretical Exams:
   - Midterm Exams: Measure students' understanding of fundamental theoretical concepts.
   - Comprehensive Exams: Evaluate the ability to integrate various concepts and solve complex problems.
   - Final Exams: Assess the overall comprehension of the course material.

2. Assignments and Reports:

- Homework Assignments: Evaluate students' understanding of theoretical concepts and their application to specific problems.
- Lab Reports: Assess the ability to conduct experiments, analyze results, and write scientific reports.
- Individual and Group Projects: Measure the ability to work independently and collaboratively to solve complex engineering problems.

3. Projects:
- Design Projects: Evaluate the ability to design and implement electrical circuits and electronic systems.
- Research Projects: Assess the capacity to conduct scientific research and present findings.
- Capstone Projects: Evaluate the ability to apply acquired knowledge and skills to solve real-world engineering problems.

4. Presentations:
- Oral Presentations: Assess effective communication skills and the ability to present information clearly and persuasively.
- Poster Presentations: Evaluate the ability to summarize complex information in a simple and visually appealing format.

5. Continuous Assessment:
- Participation in Discussion Sessions: Evaluate active participation in discussions and the exchange of ideas.
- Regular Attendance in Lectures: Assess commitment and discipline.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor	Electrical Engineering	Control			1	
Assistant Professor	Electrical Engineering	Control			3	
	Electrical Engineering	Communications			2	
	Electrical Engineering	Power			1	
	Electrical Engineering	Physics Thin Films			1	
Instructor	Electrical Engineering	Control			4	

	Electrical Engineering	Communications			5	
	Electrical Engineering	Power			1	
	Electrical Engineering	Electronics			1	
	Computer Engineering	Computers			1	
	Computer Engineering	Wireless Sensors			1	
Assistant Instructor	Electrical Engineering	Computers			1	
	Electrical Engineering	Communications			2	
	Electrical Engineering	Power			2	
	Electrical Engineering	Electronics			2	
	Computer Engineering	Computer s			1	

Professional Development

Mentoring new faculty members

- Training and Development Programs: Organizing workshops and seminars on the latest advancements in electrical engineering and effective teaching methods.
- Encouraging Further Studies: Motivating new faculty members to pursue higher education and obtain a PhD degree.
- Research Opportunities: Providing new faculty members with opportunities to work in advanced research centers.
- Conference Participation: Supporting participation in local and international conferences and seminars to present research and exchange expertise.
- Publishing Research Papers: Encouraging the submission and publication of research papers in peer-reviewed scientific journals.
- Training on Modern Educational Technologies: Providing training on using modern teaching techniques, such as project-based learning and collaborative learning.
- Performance Evaluation: Encouraging faculty members to periodically assess their performance and develop individual improvement plans.

Professional development of faculty members

- Opportunities in Advanced Research Centers: Providing new faculty members with opportunities to work in advanced research centers.
- Support for Conference Participation: Encouraging participation in local and international conferences and seminars to present research and exchange expertise.

- Promoting Research Publication: Motivating faculty members to submit and publish research papers in peer-reviewed scientific journals.
- Training on Modern Educational Technologies: Offering training on the use of modern teaching techniques, with a focus on interactive methods such as project-based learning and collaborative learning.
- Regular Performance Evaluation: Encouraging faculty members to periodically evaluate their performance and develop individual improvement plans.

12. Acceptance Criterion

Central Admission by the Ministry of Higher Education and Scientific Research.

13. The most important sources of information about the program

- College Website: https://www.uoanbar.edu.iq/EngineeringCollege/CMS.php?ID=224
- Department Website and Email: https://www.uoanbar.edu.iq/EngineeringCollege/CMS.php?ID=224
- Scientific Guide for the Department: [Curriculum for Electrical Engineering(2022)](https://www.uoanbar.edu.iq/EngineeringCollege//catalog/Curriculum%20for%20EElectrical%20(2022)(1)(1).pdf)

14. Program Development Plan

Curriculum Updates:
- Establishing Specialized Committees: Regularly reviewing and updating curricula.
- Incorporating Elective Courses: Introducing electives aligned with students' interests and future trends.
- Adopting Modern Teaching Methods: Implementing active learning and collaborative learning strategies.

Enhancing Infrastructure:
- Equipping Laboratories: Providing the latest devices and equipment in labs.
- Multimedia Lecture Halls: Ensuring availability of multimedia-equipped classrooms.
- Digital Fabrication Workshops: Establishing workshops with digital manufacturing tools.

Research Program Development:
- Encouraging Student Participation: Motivating students to engage in research projects.
- Providing Financial and Logistical Support: Supporting researchers to facilitate their work.
- Publishing Research: Promoting the dissemination of research findings in scientific conferences and peer-reviewed journals.

Building Strategic Partnerships:
- Collaborative Workshops and Seminars: Organizing joint events with local and international institutions.
- Experience Exchange: Collaborating with counterpart departments in Iraqi, Arab, and international universities, including inviting visiting professors.

Human Resource Development:
- Continuous Training Programs: Offering ongoing training for faculty members.
- Promoting Advanced Degrees: Encouraging faculty members to pursue higher academic qualifications.

- Industry Experts: Attracting professionals from the industry to teach specialized courses.

Performance Indicators:
- Increased Enrollment: Growth in the number of students registering for the program.
- Improved Graduation Rates: Enhancing the percentage of students completing the program successfully.
- Higher Employability: Increasing the number of graduates working in electrical engineering fields.
- Research Output: Boosting the number of published research papers in peer-reviewed journals.
- International Accreditation: Achieving global recognition and accreditation for the program.

Program Skills Outline													
Year/Level	Course Code	Course Name	Required / Elective	NGO							Domain		
				i	ii	iii	iv	v	vi	vii	Knowledge	Skills	Ethics
1	UOA001	Arabic Language	R				X					X	X
1	ENG003	Calculus I	R	X							X		
1	ENG004	Calculus II	R	X							X		
1	ENG002	Chemistry	R	X		X					X	X	
1	UOA007	Computer Science	R	X					X	X	X	X	
1	ELE002	Digital Techniques I	R		X	X					X	X	
1	ENG007	Engineering Drawing	R	X					X	X	X	X	
1	ENG006	Engineering Mechanics (Static)	R	X							X		
1	UOA003	English Language	R				X					X	X
1	ENG005	Fundamentals of Electrical Engineering I	R	X		X					X	X	
1	ELE001	Fundamentals of Electrical Engineering II	R	X		X					X	X	
1	UOA005	Human Rights and Democracy	R					X					X
1	ENG001	Physics	R	X		X					X	X	
2	UOA002	Arabic Language II	R				X					X	X
2	ENG008	Calculus III	R	X							X		
2	ENG009	Calculus IV	R	X							X		
2	UOA008	Computer Science II	R	X					X	X	X	X	
2	UOA006	Crimes of the Baath Regime in Iraq	R					X					X
2	ELE015	DC Machines I	R	X		X					X	X	
2	ELE016	DC Machines II	R	X		X					X	X	
2	ELE040	Digital Techniques II	R		X	X					X	X	
2	ELE003	Electric Circuits I	R		X						X		
2	ELE004	Electric Circuits II	R		X						X		
2	ELE005	Electromagnetic Fields I	R	X	X						X		
2	ELE006	Electromagnetic Fields II	R	X	X						X		
2	ENG010	Engineering Statistics	R	X				X			X		X
2	UOA004	English Language II	R				X					X	X
2	ELE007	Fundamentals of Electronics I	R	X	X						X		
2	ELE008	Fundamentals of Electronics II	R	X	X						X		
3	EE3324	AC Machines I	R	X	X						X		
3	EE3325	AC Machines II	R	X	X						X		

Program Skills Outline													
Year/Level	Course Code	Course Name	Required / Elective	NGO							Domain		
				i	ii	iii	iv	v	vi	vii	Knowledge	Skills	Ethics
3	EE3328	Analog Communications and Noise	R		X						X		
3	EE3323	Computer Networks	R		X						X		
3	EE2312	Computer Programming	R		X						X		
3	EE3329	Digital Communications	R		X						X		
3	EE3321	EE Lab 31	R			X	X			X		X	X
3	EE3322	EE Lab 32	R			X	X			X		X	X
3	EE3317	Electric Power I	R		X						X		
3	EE3318	Electric Power II	R		X						X		
3	EE3326	Electronics I	R	X	X						X		
3	EE3327	Electronics II	R	X	X						X		
3	EE3210	Engineering Economy	R					X					X
3	EE3107	English Language III	R				X					X	X
3	EE3319	Signals and Systems I	R	X							X		
3	EE3320	Signals and Systems II	R	X							X		
4	EE4335	Advanced Communication Systems	R		X						X		
4	EE4332	Control Theory I	R		X						X		
4	EE4333	Control Theory II	R		X						X		
4	EE4343	Digital Electronics	E		X	X					X	X	
4	EE4330	EE Lab 41	R			X	X			X		X	X
4	EE4331	EE Lab 42	R			X	X			X		X	X
4	EE4336	Electric Power III	R	X	X						X		
4	EE3211	Engineering Numerical Methods	R	X						X	X	X	
4	EE4107	English Language IV	R				X					X	X
4	EE4338	Final Year Project I	R	X	X	X	X	X	X	X	X	X	X
4	EE4339	Final Year Project II	R	X	X	X	X	X	X	X	X	X	X
4	EE4334	Information Theory	R		X						X		
4	EE4108	Management and Leadership Skills	R				X	X	X	X		X	X
4	EE4337	Power Electronics	R		X						X		
4	EE4348	Power System Analysis	E		X						X		
4	EE4345	Programmable Logic Controller (PLC)	E		X						X		