

University of Misan

جامعة ميسان



First Cycle – Four Levels – 240 ECTS

Bachelor's Degree (B.Sc.) - Biology

الدورة الأولى - بكالوريوس علوم أحياء - أربع سنوات - ٢٤٠ وحدة ائتمانية



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1. Vision & Mission Statement

Vision Statement

The Electrical Engineering Program at the University of Misan aspires to be a recognized center of excellence in electrical engineering education, known for graduating engineers who combine rigorous theoretical grounding with practical, hands-on competence. The program envisions its graduates contributing meaningfully to the advancement of Iraq's electrical power, electronics, and communications sectors, while holding their own alongside graduates of leading engineering programs regionally and internationally.

Mission Statement

The mission of the Electrical Engineering Program is to deliver a high-quality undergraduate education that integrates fundamental sciences, mathematics, and core engineering principles with laboratory practice, design experience, and computational tools. The program is committed to preparing graduates for immediate, competent professional practice; to fostering the communication skills, teamwork, and ethical judgment expected of practicing engineers; and to instilling the habits of lifelong learning needed to sustain a career, whether through continued professional development or advanced graduate study. In doing so, the program serves its students, the engineering profession, and the wider community it operates within.

Program Goals

Within a few years of graduation, graduates of the Electrical Engineering Program are expected to:

- Establish themselves as competent electrical engineers, applying sound technical knowledge and design judgment to solve real engineering problems in industrial, governmental, or private-sector settings, and building a professional reputation for technical expertise.

- Continue to grow professionally and intellectually, whether by pursuing postgraduate studies (master's or doctoral degrees) or by acquiring professional certifications and specialized training that keep pace with developments in the field.
- Assume positions of increasing responsibility, contributing effectively as members and leaders of engineering teams through clear communication, collaboration, and sound engineering judgment within diverse and multidisciplinary environments.
- Practice engineering with professional integrity, upholding safety, honesty, and ethical responsibility in their work, and contributing positively to their communities and to society through the responsible application of their expertise.

2. Program Specification Overview

Programme code:	BSc-BIO	ECTS	240
Duration:	4 levels, 8 Semesters	Method of Attendance:	Full Time

Electrical engineering is one of the newer branches of engineering, and dates back to the late 19th century. It is the branch of engineering that deals with the technology of electricity. Electrical engineers work on a wide range of components, devices and systems, from tiny microchips to huge power station generators.

Level 1 introduces students to the fundamentals of electrical engineering science and is suitable for progression in all programs within the Electrical Engineering suite of programmes. Core program-specific topics are covered at Level 2 to prepare for the research-led specialized modules at Levels 3 and 4. The University of Missan Electrical Engineering graduate is thus trained to appreciate how research informs teaching, in accordance with the university and college mission statements.

In Level 2, the student learns the basic sciences that qualify him to understand the materials that he will learn about in Levels 3 and 4. The student also learns the basics of specialization courses in electrical engineering, which are power, communications and electronics.

The spirit of research is developed and reinforced from the outset through practical procedures, which are either integrated into lecture units or taught in dedicated practical units such as laboratory experiments conducted by the student in the laboratory. There is a summer training that the student conducts in the field of work in the field of electrical engineering after level 3, which is considered among the graduation requirements for each student, level 4, all students carry out an independent research project, which may be a solution to a practical problem that exists in the scope of work.

Academic tutorials are held at Levels 1 and 2 with the same tutor, who is also the personal tutor, providing continuity and progressive guidance. Level 1 and 2 tutorials include a number of workshops to teach skills, e.g. library use and presentation skills, followed by assessed exercises, e.g. essays and talks, as opportunities to practice these skills in a subject-specific context.

International years and Industrial placements are also offered and individual needs are discussed with the appropriate tutor and accommodated wherever possible.

3. Program Learning Outcomes

4.1 Knowledge and Understanding (K)

- K1.** Apply mathematical, scientific, and engineering fundamentals to investigate electrical engineering problems and propose practical, sound solutions.
- K2.** Manage engineering projects and work effectively within multi-disciplinary teams, demonstrating responsible conduct and professional development.
- K3.** Support the engineering and technological needs of local industry and society through the application of electrical engineering knowledge.
- K4.** Apply the ethical principles and professional codes of conduct expected of practicing electrical engineers.
- K5.** Recognize the importance of continuing education and pursue learning opportunities beyond graduation.
- K6.** Practice and value the skills of teamwork and collaborative problem-solving within engineering contexts.
- K7.** Stay informed of recent developments and emerging technologies in the field of electrical engineering, including power, electronics, and communications.

4.2 Intellectual/Cognitive Skills (C)

- C1.** Apply scientific and engineering methodology to identify, formulate, and investigate complex electrical engineering problems.
- C2.** Analyze complex electrical engineering problems, including circuits, machines, power systems, and control systems, and develop sound technical solutions.
- C3.** Design and conduct engineering experiments and laboratory investigations appropriately, and analyze and interpret the resulting data.
- C4.** Evaluate and interpret technical literature, datasheets, and engineering standards critically in support of analysis and design.
- C5.** Synthesize information and techniques from multiple electrical engineering sub-disciplines to address integrated design problems.
- C6.** Apply mathematical, statistical, and numerical methods to analyze and model electrical engineering systems and data.
- C7.** Make evidence-based engineering decisions, taking into account technical, economic, and safety constraints.
- C8.** Demonstrate creative and innovative thinking in the design of electrical and electronic systems and solutions.

4.3 Practical and Professional Skills (P)

P1. Perform standard electrical and electronics laboratory techniques competently and safely, including circuit construction, measurement, and testing.

P2. Use oscilloscopes, multimeters, function generators, and other laboratory and measurement instruments effectively.

P3. Select, connect, and troubleshoot sensors, actuators, and measurement devices relevant to electrical engineering applications.

P4. Use computer-aided design (CAD) and simulation tools to design, model, and analyze electrical and electronic systems.

P5. Apply digital and analog electronic design techniques, including the design, construction, and testing of circuits and prototypes.

P6. Use programming languages and computational tools to support engineering analysis, automation, and design.

P7. Maintain accurate technical records, documentation, and reports of laboratory work, projects, and engineering designs.

P8. Follow safety protocols, engineering standards, and professional and ethical guidelines in laboratory work, design, and projects.

4.4 General and Transferable Skills (T)

T1. Communicate technical and engineering information effectively, in both spoken and written form, in English and Arabic.

T2. Work collaboratively in teams and lead group engineering projects effectively.

T3. Use information technology and engineering software competently in academic and professional contexts.

T4. Manage time, resources, and engineering projects effectively to meet deadlines and objectives.

T5. Present technical and engineering findings clearly to both specialist and non-specialist audiences.

T6. Search, retrieve, and critically evaluate technical and scientific literature relevant to electrical engineering.

T7. Demonstrate self-directed learning and a commitment to continuing professional development.

T8. Apply problem-solving skills to real-world engineering situations, exercising sound judgment under practical constraints.

4. Academic Staff

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5. Credits, Grading and GPA

Credits

Misan University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

GRADING SCHEME				
مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:	
Note: Marks with Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above. ملاحظة: سيتم تقريب العلامات العشرية التي تزيد أو تقل عن ٠.٥ إلى العلامة الكاملة الأعلى أو الأدنى (على سبيل المثال، سيتم تقريب علامة ٥٤.٥ إلى ٥٥، بينما سيتم تقريب علامة ٥٤.٤ إلى ٥٤). لدى الجامعة سياسة لا تسمح بـ "حالات الرسوب القريبة من النجاح"، لذا فإن التعديل الوحيد للعلامات الممنوحة من قبل المصححين الأصليين سيكون التقريب التلقائي الموضح أعلاه.	

Calculation of the Cumulative Grade Point Average (CGPA)

- The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

CGPA of a 4-year B.Sc. degree:

$$\text{CGPA} = [(1\text{st module score} \times \text{module ECTS}) + (2\text{nd module score} \times \text{module ECTS}) + (3\text{rd module score} \times \text{module ECTS}) + \dots + (\text{last module score} \times \text{module ECTS})] / 240$$

6. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite
EL111	Fundamentals of Electrical Engineering I	93	82	7.00	C	
EE112	Mathematics I	63	62	5.00	B	
EE113	Basic physics	63	62	5.00	B	
UM114	Computer Programming	63	62	5.00	B	
EE123	Chemistry	48	27	3.00	B	
UM116	Academic English I	33	17	2.00	S	
ENG123	Workshop Technology	48	27	3.00	S	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite
EL121	Fundamental of Electrical Engineering II	93	57	6.00	C	
EE122	Mathematics II	63	62	5.00	B	

EE123	ELECTRONIC I	63	62	5.00	C	
EL124	computer Programming II	63	37	4.00	C	
EE125	Mechanical Engineering	33	17	2.00	B	
EE115	Engineering Drawing	48	52	4.00	B	
UM126	Democracy and Human Rights	33	17	2.00	S	
UM123	Arabic Language I	33	17	2.00	S	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite
EL211	Electrical Circuit I	63	37	4.00	C	
EL212	Electrical Machine I	63	37	4.00	C	
ENG201	Mathematical III	63	37	4.00	B	
EL213	Electronics II	63	62	5.00	C	
EL214	Electromagnetic fields I	48	27	3.00	B	
EL215	Computer Programming III	63	37	4.00	C	
EL216	Digital Techniques I	63	37	4.00	C	
UM202	Academic English II	33	17	2.00	S	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite
EL221	Electrical Circuit II	63	37	4.00	C	
EL222	Electrical Machine II	78	47	5.00	C	
ENG202	Mathematical III	63	37	4.00	B	
EL223	Electronics III	63	37	4.00	C	
EL224	Electromagnetic fields	48	27	3.00	B	
EL215	Computer Programming IV	63	37	4.00	C	
EL226	Digital Techniques II	33	17	2.00	C	
UM203	Arabic Language II	33	17	2.00	S	

MNS120	Baath Crimes	33	17	2.00	S	
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Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite
EL311	Electrical Machines I	78	47	5.00	C	
EL312	Electrical Power I	63	37	4.00	C	
EL313	Communication I	63	37	4.00	C	
EL314	Engineering Analysis	48	52	4.00	B	
EL315	Electronics IV	63	37	4.00	C	
EL316	Control I	78	22	4.00	C	
EL317	Wave Propagation	33	17	2.00	C	
EL318	Computer Architecture	48	27	3.00	C	

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite
EL321	Electrical Machines II	78	47	5.00	C	
EL322	Electrical Power II	63	62	5.00	C	
EL323	Communication II	78	47	5.00	C	
EL324	Numerical Analysis	48	27	3.00	B	
EL325	Electronics V	48	27	3.00	C	
EL326	Control II	48	27	3.00	C	
EL327	Antenna	33	17	2.00	C	
EL328	Computer Networks	63	37	4.00	C	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite
EL411	Power System Analysis I	63	37	4.00	C	
EL412	Power Electronics	78	47	5.00	C	
EL413	Information Theory	78	47	5.00	C	
EL414	Engineering Control III	78	47	5.00	C	

EL415	Advanced Electronics I	48	52	4.00	C	
EL416	Statistics	33	17	2.00	E	
EL417	Engineering Project	63	12	3.00	C	
EL418	Professional Ethics	33	17	2.00	C	

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite
EL421	Power System Analysis II	63	37	4.00	C	
EL422	Special Machine	78	72	6.00	C	
EL423	Digital Communication	78	47	5.00	C	
EL424	Intelligent Control Systems	78	47	5.00	C	
EL425	Advanced Electronics	48	52	4.00	C	
EL426	Elective (Renewable Energy)	48	27	3.00	E	
EL427	Engineering Project	63	12	3.00	C	

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امسح الكود للوصول إلى النسخة الإلكترونية