

University of Technology
الجامعة التكنولوجية



*First Cycle – Bachelor's Degree (B.Sc.) - Electrical
Engineering / Electrical Engineering*

بكالوريوس في الهندسة الكهربائية / الهندسة الكهربائية (الدورة الاولى)



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1. **Mission & Vision Statement**

Vision Statement

The vision of the department is to be a distinct department among nationally and globally corresponding engineering departments and to be a beacon in scientific knowledge to keep up with scientific development and a leader in higher education and scientific research through the preparation of engineering cadres effective in the fields of electrical engineering to provide a motivating environment who can contribute to the needs of the society and the labour market in diverse fields through professional competence, and research ability to become an international department in the ranking.

Mission Statement

The department's mission is to prepare and develop national engineering cadres in electrical engineering disciplines who are qualified academically, pedagogically, and professionally, able to serve the community and meet the labour market requirements following quality assurance standards. In this regard, the department looks eagerly to preparing high-quality graduates who enjoy an excellent background that combines deep knowledge and basic skills. This makes the graduates capable of solving the problems of different community sectors in the fields of electric power and machinery.

2. Program Specification

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

This specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities provided.

Level 1 exposes students to the fundamentals of Electrical engineering, suitable for progression to all programs within the electrical program group. You will be taught the fundamental engineering principles in the first two years. In the third year, you can take advanced specialized topics, which will give you the most direct route to a specialist professional engineering career or enable you to go into further education. You will also have access to some modules offered by other engineering departments and some non-engineering topics, such as management and entrepreneurship.

Program-specific core topics are covered at Level 2 preparing for research-led subject specialist modules at Levels 3 and 4. An electrical engineering student graduate is therefore trained to appreciate how research informs teaching.

The research ethos is developed and fostered from the start via practices, which are either embedded in lecture modules or taught in dedicated practical modules, research seminars and tutorials. There is a compulsory field course in Levels 2 and 3, which students must pass it. At Level 4 all students carry out an independent research project, which may be a theory study or data analysis project, or laboratory based project. This allows students to develop their own wide-ranging interests in Electrical Engineering. Decisions on what to study are made with input from personal tutors.

3. Program Goals

1. Graduation of advanced engineering staff in all electrical engineering disciplines academically and professionally qualified to meet the needs of the labour market.
2. Provision of a distinct university environment for creativity and scientific research.
3. Optimal usage of resources and available possibilities to get international academic accreditation according to quality assurance standards.
4. Working on the prosperity and development of the community by providing research projects and advisory services which contribute to the solution of the problems and the development of society.
5. Attracting the distinct scientific talents in the field of electrical engineering in all specialities locally and internationally to achieve the vision of the department.
6. Strengthening and developing the relations of the department with the corresponding scientific departments locally and internationally and with the related institutions and ministries to serve the community.

4. Student Learning Outcomes

The program of Electrical Engineering Branch provides opportunities for students to develop and demonstrate knowledge and understanding, skills, qualities and other attributes in the following outcomes:

Outcome 1

Science and Mathematics

Graduates will be able to:

1. Explain the fundamental concepts, mathematical, physical principles, and techniques that underpin electrical engineering.
2. Solve familiar problems using established methodologies and deriving, adapting, and applying new ones with guidance.

Outcome 2

Engineering Analysis

Graduates will be able to:

1. Apply analytic principles and techniques and software engineering skills to analyse, design, implement, and simulate electrical engineering systems, justifying approaches per design criteria.
2. Interpret abstraction and justify the use of computational techniques, and be able to identify appropriate components to automate and optimize systems and processes.

Outcome 3

Laboratory and Field Studies

Graduates will be able to perform laboratory experiments and field studies, by using scientific equipment and computer technology while observing appropriate safety protocols.

Outcome 4

Data Analyses and Engineering Practice

Graduates will be able to

1. Manage projects by using relevant practical and laboratory skills on your own or as a member of a team.
2. Demonstrate scientific quantitative skills, such as the ability to conduct simple data analyses.

Outcome 5

Economic, legal, social, ethical and environmental context

Graduates will be able to

1. Explain the role of business processes in engineering, including the commercial, societal and legal framework within which the industry operates and advise stakeholders on their implications.
2. Incorporate ethical, sustainability and environmental issues into your professional conduct, and integrate these into your engineering practice.

Outcome 6

Design

Graduates will be able to

1. Communicate, interact and work with peers and professionals from other disciplines, as well as non-specialist stakeholders and manage work in terms of project plans, deliverables and costs.
2. Generate creative and innovative design for products, systems, components or processes to fulfill new needs.

5. Academic Staff

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6. Credits, Grading and GPA

Credits

Electrical Engineering branch of UOT 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:				
Number 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.				

Calculation of the Cumulative Grade Point Average (CGPA)

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.
2. CGPA of a 4-year B.Sc. degree:

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

7. Curriculum/Modules

SWL: Student Workload, SSWL: Structured SWL, USSWL: Unstructured SWL

B: Basic learning activities, C: Core learning activity, S: Support or related learning activity

E: Elective learning activity

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
DEHR105	Democracy and Human Rights	33	17	2.00	B	None
WSHE106	Workshops	90	10	4.00	S	None
COSC108	Computer	48	27	3.00	B	None
EDAC111	Engineering Drawing and AutoCAD	63	12	3.00	S	None
FUEE112	Fundamentals of Electrical Engineering 1	93	82	7.00	C	None
MATH113	Mathematics 1	63	87	6.00	B	None
MEEN114	Mechanical Engineering	48	77	5.00	B	None

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
WSHE106	Workshops	90	10	4.00	S	None
ENLA107	English Language	33	17	2.00	B	None
DITE121	Digital Techniques	78	47	5.00	C	None
FUEE122	Fundamentals of Electrical Engineering 2	93	82	7.00	C	FUEE112
MATH123	Mathematics 2	63	87	6.00	B	MATH113
PHEL124	Physics of Electronics	63	87	6.00	C	None

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request

8. **Contact**

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