

Southern Technical University الجامعة التقنية الجنوبية



*First Cycle – Bachelor's Degree (B.Sc.) -
Electromechanical Techniques Engineering*
بكالوريوس - هندسة التقنيات الكهروميكانيكية



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1. **Mission & Vision Statement**

Vision Statement

The primary vision of the EMET program is to provide graduates with the knowledge and skills necessary to apply current methods and technology to the development, design, operation, and management of electro-mechanical systems, particularly in those industries where automated systems are prevalent. Electromechanical Engineering Techniques Dept. seeks to be engineered edifice of excellence in the field of electromechanical engineering between the established universities worldwide.

Mission Statement

This programme specification provides and prepares a number of specialists in the field of electromechanical engineering at the level of cognitive distinct and processions to the rapid development of new developments in this field and a commitment to professional ethics in the field of work and society.

2. Program Specification

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

The EMET program provides the basic undergraduate education required for a career as an electromechanical engineering technologist. The program emphasizes a breadth of knowledge in all engineering technology fields related to typical, highly-automated manufacturing, production, or assembly plant processes. The degree provides basic coverage in all major areas of technology involved in the operation and control of manufacturing and production processes.

Level 1 offers students the fundamentals courses required. Programme-specific core topics are covered at Levels 2, 3 and 4

3. Program Objectives

1. To prepare engineers efficiently specialists in the field of electromechanical engineering and able to develop their skills in the fields of engineering knowledge and proficient use of applications in the field of electromechanical specialized in the design and use of services related to their specialty.
2. Working on the creation of engineers on a jointly organized work, and enhancing communication with local and international engineering and scientific institutions and universities, in the responsibility of professional and ethical.
3. To develop the spirit of leadership among students and prepare them for their roles postgraduation.
4. To provide Governmental state institutions and private sector with specialists, experts and consultants, scientists, besides supporting scientific research centers and engineering projects with distinguished scientific cadres.
5. Work to develop and improve the efficiency and performance of scientific and administrative faculty staff and enable them to use the latest scientific methods, as well as the optimal use of the department facilities and possibilities to keep abreast of scientific developments and qualitative cooperation with international universities and guide it to serve the community and state institutions.

4. Student Learning Outcomes

Graduates of the Electro-Mechanical Engineering Technology program can show:

Outcome 1

An ability to apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems in the field of electromechanical engineering applications.

Outcome 2

An ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline.

Outcome 3

An ability to apply written, oral, and graphical communication in broadly-defined technical and nontechnical environments; and an ability to identify and use appropriate technical literature.

Outcome 4

An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes.

Outcome 5

An ability to function effectively as a member or leader on a technical team.

Outcome 6

The ability to design, auditing and supervising the implementation of systems related to electromechanical engineering.

Outcome 7

Ability to derive and perform the approach issues to engineering problems in a scientific manner and determine the appropriate style to address the engineering problems emerging.

5. Academic Staff

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6. Credits, Grading and GPA

Credits

Southern technical 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:				
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.

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

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
STUMETC 111	Fundamentals of Electrical Engineering	139	86	9	C	
STUMETC 112	Engineering Materials	109	116	9	C	
STUMETC 113	Mathematics	94	81	7	B	
STUMETC 114	Fundamentals of computer/1	49	26	3	B	
STUMETC 115	Democracy and Human Rights	33	17	2	B	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
STUMETC 121	Electronic Physics	109	116	9	C	
STUMETC 122	Engineering Mechanics	94	81	7	C	
STUMETC 123	Engineering and electrical Drawing	110	40	6	B	
STUMETC 124	English language/1	33	17	2	B	
STUMETC 125	Workshops	94	56	6	B	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
STUMETC 231	Electrical Machines	109	91	8	C	

STUMETC 232	Thermodynamic and fluid	109	91	8	C	
STUMETC 233	Electrical and Electronic Circuits	124	26	6	C	
STUMETC 234	Advance Mathematics	79	46	5	B	
STUMETC 235	English Language/2	48	27	3	B	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
STUMETC 241	Electrical devices and measurements	109	91	8	C	
STUMETC 242	Electronics	109	66	7	C	
STUMETC 243	Strength of Materials	109	66	7	C	
STUMETC 244	Programming	79	46	5	B	
STUMETC 245	Fundamentals of computer/2	49	26	3	B	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
STUMETC 351	Electric Power Systems	109	66	7	C	
STUMETC 352	Heat transfer and Hydraulic systems	109	66	7	C	
STUMETC 353	Communications	109	66	7	C	
STUMETC 354	Theory of Machines	109	41	6	C	
STUMETC 355	English Language/3	33	42	3	B	

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
STUMETC 361	Synchronous and special Machines	124	51	7	C	
STUMETC 362	Control and Vibration Theory	109	41	6	C	
STUMETC 363	Industrial Engineering	78	72	6	C	
STUMETC 364	Electromechanical designs	78	72	6	C	
STUMETC 365	Engineering and Numerical Analysis	63	62	5	C	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
STUMETC 471	Power Electronics and Drive	109	66	7.00	C	
STUMETC 472	Electromechanical Devices	109	66	7.00	C	
STUMETC 473	Automation and Control	64	111	7.00	C	
STUMETC 474	Computer Aided Design and Manufacturing	109	41	6.00	C	
STUMETC 475	English Language/4	64	11	3.00	B	

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
STUMETC 481	Signals and systems	124	76	8.00	C	
STUMETC 482	Microprocessors and Microcontrollers	124	76	8.00	C	

STUMETC 483	Air Condition And Cooling systems	124	76	8.00	C	
STUMETC 484	Engineering project	93	57	6.00	C	

8. **Contact**

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