Ministry of Higher Education
and Scientific Research

Department Assurance Quality
and accreditation Academic

Academic Program Description

2025

Introduction:

The educational program is a coordinated and organized package of courses that include procedures and experiences organized in the form of academic vocabulary whose main purpose is to build and refine the skills of graduates, making them qualified to meet the requirements of the labor market, which is reviewed and evaluated annually through internal or external audit procedures and programs such as the external examiner program.

The description of the academic program provides a brief summary of the main features of the program and its courses, indicating the skills that are being worked on to acquire for students based on the objectives of the academic program, and the importance of this description is evident because it represents the cornerstone in obtaining program accreditation and is written jointly by the teaching staff under the supervision of the scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the vocabulary and paragraphs of the previous guide in light of the developments and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the description of the academic program circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna track as the basis for their work.

In this regard, we can only emphasize the importance of writing a description of academic programs and courses to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The description of the academic program provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he has made the most of the available learning opportunities. It is derived from the description of the program.

Program Vision: An ambitious picture for the future of the academic program to be a sophisticated, inspiring, stimulating, realistic and applicable program.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual), whether it is a requirement (ministry, university, college and scientific department) with the number of study units.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by the student after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty member to develop the student's teaching and learning, and they are plans that are followed to reach the learning goals. That is, describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: University .... Southern Technical University.....

Faculty/Institute: Institute ..... Maysan Technical Engineering College.....

Scientific Department: Department of .....Engineering of electromechanical Systems techniques.....

Academic or Vocational Program Name: Bachelor of Electromechanical Technology

Final Certificate Name: Bachelor of Electromechanical Technology Engineering.....

Academic System: Semester

Description Date: 1/4/2025

File Filling Date: 1/4/2025

Signature :

Scientific Associate Name: Dr. Jawad Jaaywel Saadoon

Signature :

Head of department: Assist. Prof. Dr. Ahmed Thamer Radhi

1/4/2025

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Division of Quality Assurance and University Performance

Name of the Director of the Quality Assurance and University Performance Division: Alaa Qasim Mohammed

Date:

Signature:

Approval of the Dean

1. Program Vision

This academic description of the program provides a brief summary of the most important characteristics of the program and the learning outcomes expected of the student to achieve, proving whether he has made the most of the available opportunities accompanied by a description of each course within the program to form a scientific or human base in the field of maintenance, programming and operation of electromechanical devices and systems and seeks to **prepare plans for the development of staff and curricula to ensure that the requirements of quality standards and academic accreditation are met, in addition to keeping pace with development and ready-made applications in order to contribute By achieving part of it, and that the department be a distinguished scientific research edifice in its programs, curricula and scientific research.**

2. Program Mission

The department seeks to prepare and graduate a specialized staff at a high level of scientific competence and leading leadership in their work, sciences and literature and in developing the knowledge balance in the field of scientific research to serve the local, regional and international community, as well as training and refining the minds of students scientifically and cognitively and emphasizing social and cultural values for the purpose of dealing with modern systems and technologies within the field of specialization. And work to provide appropriate opportunities to develop the capabilities of the community in investing the development in technology and the need of the labor market and meet their needs in the field of electronic and software systems and provide training advisory services.

3. Program Objectives

1- Graduating highly qualified engineers in the field of electromechanical engineering who are able to develop their skills in Engineering Knowledge Areas Maintenance of electromechanical equipment and systems.

2- **Ability to understand and solve problems** In the field of applications and specialized electromechanical systems and in the design of and programming and the use of organs relevant to the jurisdiction.

3- Providing the department with teachers and researchers and providing government institutions and the private sector Qualified engineers in the field of specialization. 4- **Participate in the preparation of designs Electromechanical systems.**

4. **Program Accreditation**
There isn't any

5. **Other external influences**
1- Application + research projects + continuous workshops for students 2- Also, external influences contribute to solving many dilemmas related to approved studies 3- The needs of the labor market, the quality of graduates and the support of students' skills

6. **Program Structure**

Reviews*	Percentage	Unit of study	Number of Courses	Program Structure
Specialty+ Assistant + General	33% 35% 32%	46 Count 50 Count 45 Count	17Second stage 10Third stage 9 Third stage	**Requirements of the institution**
		For one month for the second phase		**Summer Training**

		For one month for the third stage		
				Other

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

7. Program Description				
Credit Hours		Course Name	Course or Course Code	Year/Level
practical	theoretical			
2	1	**Computer Fundamentals**	**STUMETC 245**	**Second stage** **Chapter One**
0	2	**Math**	**STUMETC 234**	
2	2	**Electronic**	**STUMETC 242**	
2	2	**DC circuits**	**STUMETC 233**	
2	2	Electrical Instruments and Measurements	**STUMETC 241**	
2	2	**Electrical Machinery / DC**	**STUMETC 231**	
2	2	**Thermodynamics**	**STUMETC 232**	
2	2	**Material resistance**	**STUMETC 243**	
14	15			Total
0	2	**Math**	**STUMETC 234**	

2	**2**	**DC circuits**	**STUMETC 233**	
2	2	**Electronic**	**STUMETC 242**	Second stage
2	**2**	**Thermodynamics**	**STUMETC 232**	Chapter Two
2	**2**	**Electrical Machinery / DC**	**STUMETC 231**	
2	**2**	**Material resistance**	**STUMETC 243**	
0	**2**	**Advanced Programming**	**STUMETC 244**	
0	**2**	**English Language**	**STUMETC 235**	
0	**2**	Crimes of the defunct Baath Party	**STUMETC 126**	
14	18			Total
2	2	**Electrical Power Systems**	**STUMETC 351**	
2	2	**Synchronous and special machines**	**STUMETC 361**	
2	2	**Control theory and vibrations**	**STUMETC 362**	
2	2	**Communications**	**STUMETC 353**	Third stage
0	2	**Industrial Engineering**	**STUMETC 363**	
2	2	**Heat transfer, hydraulic systems**	**STUMETC 352**	
0	2	**Electromechanical designs**	**STUMETC 364**	
0	2	**Engineering and numerical analyses**	**STUMETC 365**	
0	1	**English Language**	**STUMETC 355**	
2	2	**Machine theory**	**STUMETC 354**	
12	19			Total
2	2	**Power & Driving Electronics**	**STUMETC 471**	
2	2	**Microprocessors and controllers**	**STUMETC 482**	
2	2	**Signals & Systems**	**STUMETC 481**	
0	2	**Control and automation**	**STUMETC 473**	Fourth stage

2	2	Electromechanical devices	STUMETC 472	
2	2	Computer aided design and manufacturing	STUMETC 474	
2	2	Air Conditioning & Refrigeration Systems	STUMETC 483	
0	1	English Language	STUMETC 484	
12	15			Total

Number of hours for four years = 67 **Percentage of theoretical hours = 56% Total graduation units forfour years = 141**
Number of working hours for four years = 52 **Percentage of working hours = 44%**

7. Expected learning outcomes of the program	
Knowledge	
	A1- Definition of the concept of electromechanical A2- Definition of the elements of hardware design for electromechanical systems A3- Introducing the basics of engineering design in the field of specialization **A4- The student's knowledge of digital and logical circuits, communications and their areas of implementation.** **A5- The student's knowledge of the labor market and industries.** **A6- The student's knowledge of how to conduct laboratory experiments and how to analyze and apply the results.**
Skills	
	B1 - Exercises and examples specific to the subject B2 - Explain the methods of solving problems in detail B3 - Analysis and explanation of the vocabulary of the course in detail B4- The use of modern means in the delivery of the vocabulary of the study material
Values	
	A1- Involving the graduate in the labor market and spreading the spirit of honest competition. C2- Competition among the students of the stage for the purpose of completing higher university studies. C3- The ability to analyze, deduce and practice professional ethics in all circumstances. C4- Working under pressure, adopting equality and justice, and working as a member of the same team.

8. Teaching and Learning Strategies

- Education Strategies:

Education strategies are the methods and methods followed by the professor in communicating the educational goals of students, and the following are some of the teaching strategies:

1- **Lecture or delivery** strategy: in which the professor provides information and facts to students and other ideas related to the topic at hand.

2- **Discussion strategy:** In this type of education strategy, the professor determines the topic to be discussed in the lecture

3- **Problem solving strategy:** In this strategy, the cognitive environment of students is activated, through problem-solving activities, through most of the positive processes and activities that stimulate thinking and raise motivation to learn.

4- **Project-based learning strategy:** This strategy relies on design work that requires applied work, as students are assigned an applied project for the activity, so they are forced to search, read and use books and all knowledge sources in order to accomplish the required.

-Learning Strategies:

The main strategy that will be adopted in delivering this module is to encourage students' participation in exercises, while at the same time improving and expanding their critical thinking skills. This will be achieved through interactive classrooms and tutorials and consideration of the types of simple experiments involving some sampling activities of interest to students.

9. Evaluation methods

- Daily surprise exam and homework assessment
- Written Semester Exam
- Study Reports
- Class Participations and Discussions
- Daily Attendance Assessment
- Small Business Valuation

10. Faculty

Faculty Members

Academic Rank	Specialization		Special requirements/skills (if applicable)		Preparation of the teaching staff	
	year	special			Faculty Member	External Lecturer
1- Prof. Mahmoud Aziz Mohamed	Mechanical	Refractories	Delivering awareness lectures Holding workshops and seminars		Faculty Member	
2- Prof. Wael Hussein Zayer	electricity	Control and computers			Faculty Member	
3-Assoc. Prof. Ahmed Thamer Radi	electricity	Capacity & Machinery			Faculty Member	
4- Assoc. Prof. Jawad Karam Customer	Mechanical	Applied Mechanics			Faculty Member	
Dr. Khairy Berri	law	law			Faculty Member	
Eng. Raed Khalid	mathematics	mathematics			Faculty Member	
Mr. Waleed Khalaf	Mechanical	Refractories			Faculty Member	
Dr. Ibrahim Ali Hammed	Mechanical	Energy			Faculty Member	
Dr. Mustafa Sadek	Computer Science	Control and computers				External Lecturer
Eng. Hussain Rahim	Mechanical					External Lecturer
A.M. d. Sadeq Da'ir	electricity	Capacity & Machinery				External Lecturer
5-M.M. Wissam Rahim	electricity	Capacity & Machinery				External Lecturer
Eng. Fatima Yassin	electricity	Capacity & Machinery				External Lecturer
Eng. Ahmed Rahma Mikhilf	Mechanical	Air conditioning and refrigeration				External Lecturer
Prof. Asaad Kazem Akal	Mechanical					External Lecturer

External Lecturer					electricity	A.M. d. Thaer Abd El , Rahim
External Lecturer				soldering	Mechanical	Eng. Hussein Karim Abdel Zahra

Professional Development

Mentoring new faculty members

1- Holding workshops, seminars and seminars for developments in the field of electromechanics and information technology for reliability.

2- Involve them in courses to develop administrative skills, time management and smart skills.

3- Keeping up with and following up the implementation of the government program and entry.

Professional development of faculty members

The focus in the Department of Electromechanical Techniques in general is on continuous improvement, as the department always seeks to improve the scientific and administrative process and overcome all the difficulties and obstacles that hinder the educational program through the development of human resources for personal development.

The following procedures illustrate the steps implemented or in the process of being implemented in this area:

D1. Continuous improvement and development of faculty members through training programs and workshops inside and outside the department and the university.

D2. Increase extracurricular activities such as holding conferences, scientific seminars, personal creations, and sports locally, regionally, and internationally.

D3. Encouraging faculty members to obtain the highest scientific and administrative ranks through promotions.

D4. Providing modern scientific sources and books for the department's library to keep pace with continuous progress.

10. Acceptance Criterion
- Central acceptance by the Ministry (biological + applied) - Top 10% of technical institutes of the corresponding scientific departments

11. The most important sources of information about the program
• The curriculum approved by the Ministry of Higher Education and Scientific Research and its guides. • Decisions and recommendations of the scientific committees at the Southern Technical University. • Courses in teaching methods. • Course descriptions. • Courses in civil society organizations. • Conferences, seminars , workshops and seminars. • Relevant state institutions. • Internet research for similar experiments . • Personal experiences. • Labor market needs.

12. Program Development Plan
Developing engineering education and building an electromechanical technical engineer by building a development system based on: - Modern and contemporary curricula - Simulation of technical engineering education quality curricula - Relying on the international academic program taking into account local specificity - Studying the need of the labor market for electromechanical disciplines and their various branches - Opening branches specialized in the field of measurement and control, maintenance of networks and according to the needs of the labor market. - Use and development of comprehensive virtual laboratories.

Program Skills Outline

Please tick the boxes corresponding to the individual learning outcomes from the program under evaluation

Learning outcomes required from the program														
Values			Skills				Knowledge				fundamental Or optional	Course Name	Course Code	Year/Le
C3	C2	C1	B4	B3	B2	B1	A4	A3	A2	A1				
√	√	√	√	√	√	√		√	√	√	Specialized	Electronics	STUMETC 242	
√	√	√	√	√	√	√	√	√	√	√	Specialized	DC circuits	STUMETC 233	
√	√	√	√	√	√	√		√	√	√	Specialized	Electrical Instruments and Measurements	STUMETC 241	The seco
√	√	√	√	√	√	√	√	√	√	√	General	Computer Fundamentals	STUMETC 245	
√	√	√		√		√	√	√	√	√	Help	Math	STUMETC 234	
√	√	√	√	√	√	√		√	√	√	Specialized	Electrical Machinery / DC	STUMETC 231	
√	√	√	√	√	√		√	√	√	√	Specialized	Thermodynamics	STUMETC 232	
√			√	√	√	√	√	√	√	√	Specialized	Material resistance	STUMETC 243	
	√	√		√	√	√		√	√	√	Specialized	Advanced Programming	STUMETC 244	
√	√	√		√	√	√		√	√	√	General	Crimes of the defunct Baath Party	STUMETC 126	
	√	√			√	√		√	√	√	General	English Language	STUMETC 235	
√	√	√	√	√	√	√		√	√	√	Specialized	Electrical Power Systems	STUMETC 351	
√	√	√		√	√	√		√	√	√	Specialized	Synchronous and special machines	STUMETC 361	
√	√	√		√	√	√		√	√	√	Specialized	Control theory and vibrations	STUMETC 362	
√	√	√	√	√	√	√		√	√	√	Specialized	Communications	STUMETC 353	Third

√	√	√	√	√	√	√	√	√	√	√	Specialized	Industrial Engineering	STUMETC 363	
√	√	√		√		√	√	√	√	√	Specialized	Heat transfer, hydraulic systems	STUMETC 352	
√	√	√	√	√	√			√	√	√	Specialized	Electromechanical designs	STUMETC 364	
√	√	√		√	√	√	√	√	√	√	Help	Engineering and numerical analyses	STUMETC 365	
√				√	√	√	√	√	√	√	General	English Language	STUMETC 355	
	√	√		√	√	√		√	√	√	Specialized	Machine theory	STUMETC 354	
√	√	√	√	√	√	√		√	√	√	Specialized	Power & Driving Electronics	STUMETC 471	
√	√	√	√	√	√	√		√	√	√	Specialized	Microprocessors and controllers	STUMETC 482	
√	√	√	√	√	√	√	√	√	√	√	Specialized	Signals & Systems	STUMETC 481	
√	√	√	√	√	√	√		√	√	√	Specialized	Control and automation	STUMETC 473	Fourth
√	√	√	√	√	√	√	√	√	√	√	Specialized	Electromechanical devices	STUMETC 472	
√	√	√		√		√	√	√	√	√	Specialized	Computer aided design and manufacturing	STUMETC 474	
√	√	√	√	√	√			√	√	√	Specialized	Air Conditioning & Refrigeration Systems	STUMETC 483	
√	√	√		√	√	√		√	√	√	General	English Language	STUMETC 484	

- Please tick the boxes corresponding to the individual learning outcomes of the program subject to the program.