

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



Academic Program and Course Description Guide

2024

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates 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 academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

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

Concepts and terminology:

Academic Program Description: The academic program description 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 students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

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

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, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students 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 members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: University of Technology–Iraq

Faculty/Institute: Control and Systems Engineering Department

Scientific Department: Computer and Control Branch

Academic or Professional Program Name: Bachelor of Computer and Control Engineering

Final Certificate Name: Bachelor of Science of Computer and Control Engineering

Academic System: Semesters

Description Preparation Date: 17/2/2024

File Completion Date: 17/2/2024

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

1. Program Vision

The program should be distinguished by creativity and leadership in the field of computer and control engineering

2. Program Mission

Preparing specialized engineering cadres capable of serving society with high efficiency, contributing to technological development, and striving to obtain international accreditation.

3. Program Objectives

1. Providing students with basic knowledge in the disciplines of computer control engineering.
2. Developing students' analytical, creative, and professional capabilities.
3. Preparing qualified engineers commensurate with the responsibilities that await them at work sites.
4. Enhancing the practical aspect and field training for students.
5. Enhancing communication, communication and teamwork skills with others.
6. Motivating faculty and students towards scientific research to serve society.
7. Keeping pace with the scientific development taking place in the world through continuous updating of the study plan in a way that serves to achieve quality and then international accreditation.
8. Benefiting from feedback from students and graduates to achieve the department's goals.

9. Develop and expand graduate programs in the department's specializations to meet the needs of society and the labor market.

4. Program Accreditation

ABET

5. Other external influences

Is there a sponsor for the program?

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

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

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical

8. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies
Teaching and learning strategies and methods adopted in the implementation of the program in general.

10. Evaluation methods
Implemented at all stages of the program in general.

11. Faculty					
Faculty Members					
Academic Rank	Specialization		Special Requirements/Skills (if applicable)	Number of the teaching staff	
	General	Special		Staff	Lecturer

Professional Development
Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13. The most important sources of information about the program

State briefly the sources of information about the program.

14. Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
Fourth	ACOA2428	Advanced Computer Architecture II	Basic	X		X		X	X	X		X	X	X	

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

Course Description Form

1. Course Name:					
Engineering Mathematics (II)					
2. Course Code:					
CSE2304					
3. Semester / Year:					
2 nd Semester					
4. Description Preparation Date:					
6/2/2024					
5. Available Attendance Forms:					
Personal					
6. Number of Credit Hours (Total) / Number of Units (Total)					
30/6					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr. Ali Majeed Mahmood, Email: ali.m.mahmood@uotechnology.edu.iq Mina Qays Kadhim Ali, Email: 60024@uotechnology.edu.iq Russul Haitham Hadi, Email: 60151@uotechnology.edu.iq					
8. Course Objectives					
Course Objectives			<ul style="list-style-type: none"> • To introduce the basic concepts required to understand in engineering mathematics including constructing and solving matrices, Partial Derivatives and vectors. • To give an ability to apply knowledge of mathematics on engineering problems. 		
9. Teaching and Learning Strategies					
Strategy		1- Presentation of Engineering Mathematics and their problems. 2- Providing solutions to problems in Engineering Mathematics 3- Discussing solutions and resulting problems 4- The above points are accomplished through a presentation, homework, and documented reports			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	6		Matrices, Inverse Matrices such as using elementary row operation method.	Live presentation and homework	Written exam

3-4	6		Solution of system of linear equations.	Live presentation and reports	Discussing and evaluating reports
5-6	6		Partial Derivatives, Chain Rule, non independent variables.	Live presentation and homework	Written exam
7-8	6		Applications of Partial Differential Equation , Maximum , Minimum and saddle Points.	Live presentation and reports	Discussing and evaluating reports
9-12	12		Lagrange Multipliers and Applications and second derivative test.	Live presentation and homework	Written exam
13-15	6		Derivative of Vector Functions, Tangent Vectors and Gradients, Directional Derivative.	Live presentation and reports	Discussing and evaluating reports

11. Course Evaluation

20% documented exam
5% Quiz
5% reports and homework

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	1. Advanced Engineering Mathematics, Strou K.A., 4 th ed.
Recommended books and references (scientific journals, reports...)	2. Calculus and Analytic Geometry, Thomas, 12 th ed.
	3. Calculus, Howard Anton, 10 th ed.
	4. Advanced Engineering Mathematics, Kreyszig, 9 th & 10 th editions. IEEE Journals, Elsevier Journals
Electronic References, Websites	5. Advanced Engineering Mathematics, Peter V. Oneil, 7th Edition. https://scholar.google.com