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

Faculty/Institute: Control and systems Engineering

Scientific Department: Control Engineering

Academic or Professional Program Name: Control Engineering Bachelor

Final Certificate Name: Bachelor of Science in Control Engineering

Academic System: Quarterly

Description Preparation Date: 7/2/ 2024

File Completion Date: 7/2/ 2024

Signature: Signature:

Head of Department Name: Scientific Associate Name:

Date: 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

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1. Program Vision

The program is distinguished based on creativity and leadership in the fields of control engineering, automatic control, and artificial intelligence.

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 the basics of knowledge in the disciplines of control engineering and adaptive control.

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 skills and teamwork 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. Developing and expanding 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

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				General and qualification skills			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
The Fourth	8ACOT144	Adaptive Control I	Basic			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:
Adaptive Control I

2. Course Code:
8ACOT144

3. Semester / Year:
First Term

4. Description Preparation Date:
7/2/2024

5. Available Attendance Forms:
Attendance

6. Number of Credit Hours (Total) / Number of Units (Total)
6/30

7. Course administrator's name (mention all, if more than one name)
Name: Assist. Prof. Dr. Yaser Nabeel Ibrahem Email: Yaser.N.Ibrahem@uotechnology.edu.iq

8. Course Objectives

Course Objectives	❖ Introducing the student to the basics Adaptive control technique. ❖ Enable the student to know and understa the practical applications of Adaptive cont ❖ Enable the student to choose the opti solutions to problems based on their solut using Adaptive control.

9. Teaching and Learning Strategies

Strategy	1. Presentation of Adaptive control methods and their problems. 2. Providing solutions to Adaptive control problems. 3. Discussing solutions and resulting problems. 4. The above points have been 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		**Introduction and General Aspects of adaptive contro**	**Live presentation and homework**	**Examination**
3-4	6		**Types of Adaptive Contro strategies**	**Live view and reports**	**Discussing and evaluating report**
5-6	6		**Gain Scheduling Regulato**	**Live presentation and homework**	**Examination**
7-8	6		**Self Tuning Regulator**	**Live view and reports**	**Discussing and evaluating report**
9-12	12		**Model Reference Adaptiv Control**	**Live presentation and homework**	**Examination**
13-15	6		**Practical aspects and Implementation**	**Live view and reports**	**Discussing and evaluating report**

11. Course Evaluation

20% Mid Examination
5% Quiz Examination
5% Homework and activities

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	K. J. ÅstrÖm and B. Wittenmark, "Adaptive control". P. E. Wellstead and M. B. Zarrop, "Self Tuning Systems".
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	