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: Control Engineering Brunch

Academic or Professional Program Name: Bachelor of Control Engineering

Final Certificate Name: Bachelor of Science of Control Engineering

Academic System: Semesters

Description Preparation Date: 7/4/2024

File Completion Date: 7/4/2024

Signature:

Head of Department Name:

Date: 7/4/2024

Signature:

Scientific Associate Name:

Prof. Dr. Abbas H. Is

Date: 8/4/2024

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Prof. Shaymaa M. Mahdi

Signature:

Approval of the Dean

Dr. Azad Raheem

1. Program Vision

For the department to excel in creativity and leadership in the field of control engineering specialization.

2. Program Mission

Preparing specialized engineering personnel in control engineering capable of efficiently serving the community and contributing to technological advancement, while striving to obtain international accreditation.

3. Program Objectives

Goal One: Providing students with the fundamentals of knowledge in the field of control engineering.
Goal Two: Preparing qualified engineers who are capable and suited to the responsibilities awaiting them in the workforce.
Goal Three: Developing communication skills and teamwork abilities with others.
Goal Four: Preparing students for successful employment in the field of control engineering and thereby contributing to serving the community.

4. Program Accreditation

ABET

The Iraqi Council for Academic Accreditation

5. Other external influences

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	**Level (4+3+2) 56=**	**114**	**100%**	
	Level One(Bologna Process)= 13	**ECTS=60**	**100%**	
College Requirements	**Level (4+3+2) 56=**	**114**	**100%**	

	Level One(Bologna Process)= 13	ECTS=60	100%	
Department Requirements	Level (4+3+2) 56=	**114**	**100%**	
	Level One(Bologna Process)= 13	ECTS=60	100%	
Summer Training	One of the graduation requirements is the student's participation in a one-month training program at one of the specialized government institutions			
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
First	WSHE106	Workshops	-	6
First	COSC108	Computer	1	2
First	MATH112	Mathematics	4	-
First	DCEC111	DC Electrical Circuits	3	2
First	ELPH115	Electronic Physics	3	-
First	ENDR114	Engineering Drawing	-	3
First	ENLA125	English Language	3	-
First	WSHE106	Workshops	-	6
First	COPR123	Computer Programming	3	2
First	CALC122	Calculus	5	-
First	ACEC121	AC Electrical Circuits	3	2

First	CAED124	Computer Aided Engineering Drawing	-	3
Second	**HRDE1215**	Human Rights	2	-
Second	PSTC1216	Probability and Statistics	2	-
Second	ELMA1217	DC Electrical Machines	2	-
Second	MEIN1218	Measurements and Instrumentation 1	2	2
Second	MECH1219	Mechanics	2	-
Second	DITQ1220	Digital Techniques 1	2	-
Second	EMAT1221	Engineering Mathematics 1	2	-
Second	ELEC1222	Electronics 1	2	-
Second	COTH1223	Control Theory 1	2	2
Second		**Baath Regime Crimes In Iraq**	2	-
Second	MOSI1224	Modeling and Simulation	2	-
Second	ELMA1225	AC Electrical Machines	2	-
Second	MEIN1226	Measurements and Instrumentation 2	2	2
Second	DYNA1227	Dynamics	2	-
Second	DITQ1228	Digital Techniques 2	2	-
Second	EMAT1229	Engineering Mathematics 2	2	-
Second	PROG1230	Programming with MATLAB	2	
Second	ELEC1231	Electronics 2	2	-
Second	COTH1232	Control Theory 2	2	2
Second	**LABO1234**	Laboratories	-	2
Third	EANA1329	Engineering Analysis	2	
Third	NUAN1336	Numerical Analysis using MATLAB	2	
Third	MRTE1330	Microprocessor Techniques		2
Third	MCON1341	Microcontrollers and Embedded Systems	2	

Year	Code	Course		
Third	ECCD1331	Electronic Circuits Design 1	2	
Third	ELCD1337	Electronic Circuits Design 2	2	
Third	FCOM1333	Fundamentals of Communications	2	
Third	DSPR1339	Digital Signal Processing	2	
Third	PLCO1332	Programming Logic Controller 1	2	
Third	PLCO1340	Programming Logic Controller 2	2	
Third	LALG1337	Linear Algebra	2	
Third	COTH1334	Control Theory 3	3	
Third	COTH1338	Control Theory 4	3	
Third	SYSI1350	System Identification	2	
Third	CONDE1352	Control System Design 1	2	
Third	POEL1353	Power Electronics		2
Third	PMRE1335	Power Mechanics and Renewable Energy	2	
Third	FLPO1342	Fluid Power	2	
Third	LABO1351	Laboratories 1		2
Third	LABO1354	Laboratories 2		2
Fourth	DICO1458	Digital control 1	2	
Fourth	COIN1453	Computer Interfacing	2	
Fourth	DICO1451	Robotics	2	
Fourth	LSYS1444	Linear Systems 1	2	
Fourth	ICSY1445	Intelligent Control Systems	2	
Fourth	ACOT1448	Adaptive Control	2	
Fourth	CSDE1449	Control System Design 2	2	
Fourth	DICO1451	Digital control 2	2	
Fourth	PRSY1446	Process Control	2	
Fourth	ADCO1452	Linear Systems 2	2	
Fourth	INDE1442	Industrial Engineering	2	
Fourth	GPRO1454	Project	2	
Fourth	NOSY1455	Nonlinear Systems	2	

Fourth	ACNC1456	Automation and CNC Machine	2	
Fourth	LABO1459	Laboratories 1		1
Fourth	LABO1460	Laboratories 2		1

8. Expected learning outcomes of the program

Knowledge

1– Introducing the student to control engineering theories 2– Enabling the student to know and understand the practical applications of control engineering theories 3– Enabling the student to choose the optimal solutions to problems in the field of control engineering	Methods of delivering the materials Giving lectures, dialogue, discussion, scientific visits, workshops, and seminars. Evaluation methods Written exams, discussions, and homework

Skills

1– Design 2– Implementation 3– Analysis	Methods of delivering the materials Giving lectures, dialogue, discussion, scientific visits, workshops, and seminars. Evaluation methods Written exams, discussions, and homework

Ethics

1– Solve problems 2– Design 3– Data collection and analysis 4–Work collectively to solve problems and make the appropriate decision	Methods of delivering the materials Giving lectures, dialogue, discussion, scientific visits, workshops, and seminars. Evaluation methods Written exams, discussions, and homework

9. Teaching and Learning Strategies

Giving lectures, dialogue, discussion, scientific visits, workshops, and seminars

10. Evaluation methods

Written exams, discussions, homework, reports.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof. Dr. Azad Raheem Kareem	✓				✓	
Prof. Dr. Hazim Ibraheem Ali		✓			✓	
Prof. Dr. Abbas Hussain Issa	✓				✓	
Prof. Dr. Mohammed Yosif Hasan		✓			✓	
Prof. Dr. Omar Farouq Lutfy		✓			✓	
Prof. Dr. Arrif Abdulrahman	✓				✓	
Assit. Prof. Dr Farazdaq Rafeeq Yassen	✓				✓	
Assit. Prof. Dr Mohammed Jasim Mohammed		✓			✓	
Assit. Prof. Dr Ahmed Khalaf Hammody		✓			✓	
Assit. Prof. Dr Yassir Nabil Othman	✓				✓	
Assit. Prof. Dr Tagreed Mohammed Mohammed Redha		✓			✓	

Lect. Dr Qussay Fadhel Hasan	✓				✓	
Lect. Dr Alyaa Abdulredha Abbas	✓				✓	
Prof. Lect. Vian Abdulmeheesn	✓				✓	
Prof. Lect. Mina Qais		✓			✓	
Lect. Yamama Abdulfattah		✓			✓	
Assis. Lect. Amer Abd Mansour	✓				✓	
Assis. Lect. Raed Saadun Abdulwahab		✓			✓	
Assis. Lect. Sinan Abdulgaffar	✓				✓	
Assis. Lect.Mohammed Khazal Hamza	✓				✓	
Assis. Lect. Saad Ahmed Ismael	✓				✓	
Assis. Lect. Mustafa Kareem Khashan		✓			✓	
Assis. Lect. Kareem Ali Husain		✓			✓	
Assis. Lect. Rawaa Rifat Khalil		✓			✓	
Assis. Lect.Hussain Sarhan		✓			✓	
Assis. Lect.Haidar Maythem		✓			✓	
Assis. Lect. Azhar Jabar		✓			✓	
Lect. Amjed Falih		✓			✓	

Professional Development
Mentoring new faculty members
Encouraging new faculty members to participate in workshops and seminars on teaching methods, language proficiency, and computer skills. Encouraging new faculty members to periodically review the curriculum and stay updated on the latest scientific developments in the branch's specialization field.
Professional development of faculty members
Through periodic curriculum review and staying updated on the latest scientific developments in the branch's specialization field, as well as encouraging faculty members to participate in developmental workshops and seminars in the branch's specialization field.

12. **Acceptance Criterion**
(Setting regulations related to enrollment in the college or institute, whether central admission or others) 1. The criteria are included in the central admission plan for each year. 2. Acceptance of top students of institutes.

13. **The most important sources of information about the program**
Curriculum books, teaching lectures collected from multiple sources, laboratories.

14. Program Development Plan
1- The study plan for all levels of the branch is reviewed annually to make continuous updates and development of the curriculum. 2- Follow up on laboratory needs for all stages. 3- Urging the academic staff members to participate in development seminars and workshops in the branch field of specialization.

				Program Skills Outline											
Required program Learning outcomes															
Ethics				Skills				Knowledge				Basic or optional	Course Name	Course Code	Year/Level
C4	C3	C2	C1	B4	B3	B2	B1	A4	A3	A2	A1				
						X						Basic	Workshops	WSHE106	First
	X		X						X			Basic	Computer	COSC108	
	X				X						X	Basic	Mathematics	MATH112	
		X					X			X		Basic	DC Electrical Circuits	DCEC111	
		X			X					X		Basic	Electronic Physics	ELPH115	
		X					X					Basic	Engineering Drawing	ENDR114	
	X		X						X			Basic	English Language	ENLA125	
						X						Basic	Workshops	WSHE106	
	X		X						X			Basic	Computer Programming	COPR123	
	X				X						X	Basic	Calculus	CALC122	
		X					X			X		Basic	AC Electrical	ACEC121	

													Type	Course	Code	Semester
														Circuits		
		X					X						**Basic**	Computer Aided Engineering Drawing	CAED124	
													Basic	Human Rights	HRDE1215	**Second**
													Basic	Probability and Statistics	PSTC1216	
					X					X			**Basic**	DC Electrical Machines	ELMA1217	
X					X					X			**Basic**	Measurements and Instrumentation 1	MEIN1218	
	X	X		X		X			X				**Basic**	Mechanics	MECH1219	
	X					X			X				**Basic**	Digital Techniques 1	DITQ1220	
		X		X				X					**Basic**	Engineering Mathematics	EMAT1221	

												Type	Course	Code
													1	
		X					X	X			X		**Basic**	Electronics 1	ELEC1222
		X			X					X	X	**Basic**	Control Theory 1	COTH1223
Baath Regime Crimes in Iraq														
	x					x				x	x	**Basic**	Laboratories	LABO 1234
		X	X		X		X			X		**Basic**	Modeling and Simulation	MOSI1224
	X				X					X		**Basic**	AC Electrical Machines	ELMA1225
		X	X		X		X			X		**Basic**	Measurements and Instrumentation 2	MEIN1226
		X					X			X		**Basic**	Dynamic	DYNA1227
		X					X			X		**Basic**	Digital Techniques 2	DITQ1228
			X		X				X			**Basic**	Engineering Mathematics 2	EMAT1229

													Type	Course	Code	Year
		X	X		X		X				X		**Basic**	Programming with MATLAB	PROG1230	
		X			X	X					X		**Basic**	Electronics 2	ELEC1231	
		X			X						X	X	**Basic**	Control Theory 2	COTH1232	
			x		x				x				**Basic**	Engineering Analysis	EANA1329	**Third**
			x		x				x				**Basic**	Numerical Analysis using MATLAB	NUAN1336	
	x	x				x	x				x		**Basic**	Microprocessor Techniques	MRTE1330	
	x	x				x	x				x		**Basic**	Microcontrollers and Embedded Systems	MCON1341	
	x	x			x	x					x		**Basic**	Electronic Circuits Design 1	ECCD1331	
	x	x			x	x					x		**Basic**	Electronic Circuits Design	ELCD1337	

														2	
	x	x			x					x		**Basic**	Fundamentals of Communications	FCOM1333	
	x	x			x					x		**Basic**	Digital Signal Processing	DSPR1339	
	x	x	x			x	x			x		**Basic**	Programming Logic Controller 1	PLCO1332	
	x	x	x			x	x			x		**Basic**	Programming Logic Controller 2	PLCO1340	
	x	x			x					x		**Basic**	Linear Algebra	LALG1337	
		x			x		x			x	x	**Basic**	Control Theory 3	COTH1334	
		x			x		x			x	x	**Basic**	Control Theory 4	COTH1338	
	x				x					x		**Basic**	System Identification	SYSI1350	
x		x	x		x		x		x	x	x	**Basic**	Control System Design 1	CONDE1352	

												Type	Course	Code	Year
		x				x	x		x	x		**Basic**	Power Electronics	POEL1353	
		x	x			x	x		x	x		**Basic**	Power Mechanics and Renewable Energy	PMRE1335	
					x				x			**Basic**	Fluid Power	FLPO1342	
	x					x				x	x	**Basic**	Laboratories 1	LABO1351	
	x					x				x	x	**Basic**	Laboratories 2	LABO1354	
		x				x				x		**Basic**	Industrial Engineering	INDE1442	**Fouth**
	x	x			x				x	x	x	**Basic**	Automation and CNC Machine	ACNC1456	
x	x				x	x		x		x		**Basic**	Computer Interfacing	COIN1453	
	x	x			x				x	x	x	**Basic**	Robotics	DICO1451	
x	x	x			x	x			x	x	x	**Basic**	Digital control 1	DICO1458	
x	x	x			x	x			x	x	x	**Basic**	Digital control	DICO1451	

														2	
x	x	x			x				x	x	x	**Basic**	**Linear Systems 1**	**LSYS1444**
x	x	x			x				x	x	x	**Basic**	**Linear Systems 2**	**ADCO1452**
x	x				x				x			**Basic**	Intelligent Control Systems	**ICSY1445**
x	x	x			x				x	x	x	**Basic**	Nonlinear Systems	**NOSY1455**
x	x	x		x	x	x	x	x			x	**Basic**	Control System Design 2	**CSDE1449**
		x			x						x	**Basic**	Process Control	**PRSY1446**
x	x				x				x			**Basic**	Adaptive Control	**ACOT1448**
	x					x	x	x		x		**Basic**	Laboratories 1	**LABO1459**
	x					x	x	x		x		**Basic**	Laboratories 2	**LABO1460**
x	x	x		x	x	x	x	x	x	x	x	**Basic**	Project	**GPRO1454**

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