

*Republic of Iraq  
Ministry of Higher Education & Scientific Research  
Supervision and Scientific Evaluation Directorate  
Quality Assurance and Academic Accreditation  
International Accreditation Dept.*



*Academic Program Specification Form  
for the Academic Year  
2023-2024*

**2024-2023**

## **Introduction:**

The educational program is considered a coordinated and organized package of academic courses that includes procedures and experiences organized in the form of academic vocabulary, the main purpose of which is to build and refine the skills of graduates, making them qualified to meet the requirements of the labor market. It 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 summary of the main features of the program and its courses, indicating the skills that students are working to acquire based on the objectives of the academic program. The importance of this description is evident because it represents the cornerstone of obtaining program accreditation, and the teaching staff participates in writing it under the supervision of the scientific committees in the scientific departments.

This guide, in its second edition, includes a description of the academic program after updating the vocabulary and paragraphs of the previous guide considering the latest developments in the educational system in Iraq, which included a description of the academic program in its traditional form (annual, quarterly), in addition to adopting the description of the academic program circulated according to the book of the Department of Studies 3/2906. On 5/3/2023 about programs that adopt the Bologna Process as a basis for their work.

In this area, we can only emphasize the importance of writing descriptions of academic programs and courses to ensure the smooth conduct of the educational process.

## **Concepts and terminology:**

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

**Course description:** It provides a necessary summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has 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 an advanced, inspiring, motivating, realistic and applicable program. **Program message:** It briefly explains the objectives and activities necessary to achieve them and identifies the program's development paths and directions.

**Program Goals:** They are statements that describe what the academic program intends to achieve within a specific period and are measurable and observable. **Curriculum structure:** All courses/study subjects included in the academic program according to the approved learning system (semester, annual, Bologna track), whether it is a requirement (ministry, university, college, or scientific department), along with the number of study units.

**Learning Outcomes:** A compatible set of knowledge, skills, and values that the student has acquired after successfully completing the academic program. The learning outcomes for each course must be determined in a way that achieves the program objectives.

**Teaching and learning strategies:** They are the strategies used by a faculty member to develop student teaching and learning, and they are plans that are followed to reach learning goals. That is, it describes all curricular and extracurricular activities to achieve the learning outcomes of the program.

Academic Program Specification Form

University: Al-Kitab University

College/Institute:

College of Engineering Technology

Scientific Department: Department of Medical Instrumentation Techniques Engineering.

Academic or professional program: Bachelor of Medical Instrumentation Techniques Engineering.

Name of the final certificate: Bachelor's degree in Medical Instrumentation Techniques Engineering.

Academic system: Yearly System

Description preparation date: 3/17/2024

Date of filling the file: 7/4/2024



Signature: *Haider*

Name of scientific assistant: *Dr. Al-Hadi*

The date : *14.4.2024*

The file has been checked from  
Quality Assurance and University Performance  
Name of the manager of the University Quality Assurance  
and Performance:

The date  
The sign

Dean's Name: *Hussien Izzar Zynal*  
Signature:

*H.I.Z.*



*Dr. Al-Hadi*  
*14.4.2024*

### 1. Program vision

The program vision is to achieve excellent quality and leadership in; all academic and professional aspects of, community service and research activities in the field of Medical Instrumentation Techniques Engineering.

### 2. Program message

The program message is that the department's graduates should contribute to meet the country's needs in the field of Medical Instrumentation Techniques Engineering.  
. Engineering technology (academic and research) and all public and other private sectors.

### 3. Program objectives

The program objective is to prepare engineering cadres in specialty of Medical Instrumentation Techniques Engineering.

Technology engineering, who are responsible for studying the country's need for development and progress. To provide the labor market and industry sectors with professional engineers that can pursue postgraduate studies to adapt to modern technical development in Medical Instrumentation Techniques Engineering. Field.

### 4. Programmatic accreditation

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### 5. Other external influences

Laboratories, library

### 6. Program structure

Program structure	Number of courses	Unit of study	percentage	Notes*
Organization requirements	1	4	%2.02	Assistant
College requirements	6	02	%10.20	Basic
Department requirements	32	172	%87.7	Basic
summer training	2	0	%0	

<b>Other</b>	-	-		
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\* All of these values are identical to the affiliated department of Medical Instrumentation Techniques Erinningeg.

/ College of Engineering Technology / Central Technical University – Baghdad.

			Hr	Credits
Second year	<b>MITE20181</b>	Mathematic	3	6
	<b>MITE20182</b>	Anatomy	4	6
	<b>MITE20183</b>	chemistry Clinical equipment	4	6
	<b>MITE20184</b>	Electronic circuit and company	5	7
	<b>MITE20185</b>	Logic Technology	4	6
	<b>MITE20186</b>	Medical Instrumentation and Measurements	5	7
	<b>MITE20187</b>	Medical instrument 1	5	7
	<b>MITE20188</b>	Computer Application	4	3
	<b>MITE20189</b>	English Language 2	2	1
	<b>MITE20190</b>	Workshops		
			Hr	credits
Third Year	<b>MITE20191</b>	Medical Electronic Systems	4	6
	<b>MITE20192</b>	Digital Signal Processing (DSP)	4	6
	<b>MITE20193</b>	Medical communication system	6	6
	<b>MITE20194</b>	Medical instrument 2	5	7
	<b>MITE20195</b>	microprocessor	4	6
	<b>MITE20196</b>	Power Electronic	4	6
	<b>MITE20197</b>	Electrical Technology	4	6
	<b>MITE20198</b>	Computer Application	3	4
	<b>MITE20199</b>	English Language 3	1	2
	<b>MITE20200</b>	Workshops		

Fourth Year	<b>MITE20201</b>	Medical instrument 3	5	7
	<b>MITE20202</b>	Control systems	4	6
	<b>MITE202</b>	Radiation Instrumentation	4	6

<b>03</b>	Engineering		
<b>MITE20204</b>	Medical Laser Systems	4	6
<b>MITE20205</b>	Advanced digital design	4	6
<b>MITE20206</b>	Project Management	2	4
<b>MITE20207</b>	Computer Application	3	4
<b>MITE20208</b>	Project	6	4
<b>MITE20209</b>	English Language	1	2

## 7. Learning Outcomes, Teaching, Learning and Assessment Methods

### A. Learning outcome

a) Knowledge and Understanding outcome: People graduated from the program have the following skills in Medical Instrumentation Techniques Engineering.

a-1- A high level of understanding and knowledge in building, analyzing and developing ideas.

a-2- They are able to analyze engineering and scientific problems by applying suitable laws in science, mathematics and engineering and to abide by the instructions for any effectiveness in the organizational and administrative framework in the implementation of a project or facing an engineering problem, solving and evaluating it and submitting a proposal or a plan or reformulating it, translating or interpreting it.

a-3- The student should be able to speak and write in an effective scientific and engineering style in Arabic and English.

a-4- Motivating our students to actively participate in the renaissance and progress of society through holding seminars, conferences, continuing education, and providing academic consultations in the fields of Medical Instrumentation Techniques Engineering.

a-5- The student should be able to do scientific and applied research in Medical Instrumentation Techniques Engineering. Fields for the purpose of solving industrial problems.

b) Subject-specific skills.

b-1 - The ability to use the engineering techniques.

b-2 - Analyzing technical problems and providing a suitable solution.

b-3 - Scientific investigation and evaluation.

c) Thinking skill

c1 - Using brainstorming to bring out the creative ideas of some gifted students.

c2 - Developing scientific research skills using the internet to broaden the horizon of knowledge.

c3 - Encouraging the development of engineering thinking for students in memorization and guessing and motivating it towards critical thinking before remembering at certain stages.

c4 - Presenting the engineering problem or design and asking to think about all possible solutions and developments.

d) other skills

d1- Connection, communication, and information technology skill.

d2 – Co-operation and teamwork skill.

d3 – English and Arabic Language skill (include reading, writing, and listening) which can help in the art of listing, persuasion and dialogue.

d4 – Acquiring leadership quality, memory power, fast intuitive and ability to predict and extrapolate.

## B. Teaching and Learning Methods

There are many teaching and learning methods used in the Department of Medical Instrumentation Techniques Engineering. . The learning is done through practical applications, and theoretical lectures using traditional board teaching, PPT presentation, discussion groups, and seminars, and student is always asked to investigate topics and problems through the internet. The method of Bologna System will apply starting this academic year.

## C. Assessment methods

1. Seminars.

2. Academic debate, oral dialogue, semester and final theoretical and practical written examinations.

3. Writing and submitting reports and taking notes on the technical expertise gained in the field

visits.

The department has relied on clear and high-quality assessment methods and tools in order to maintain the good quality and high scientific reputation of the graduation. The quality of the graduate is very important since it constitutes the final product of the educational process. The most important methods of assessment used in the department are:

a) Objective tests: The goal of the test is to measure the ability of students to recognize and assimilate engineering facts. This can be done using the followings:

a-1- True and False Questions.

a-2- Multiple choice questions.

a-3- Interview questions (blank questions).

a-4- Completion questions.

b) Engineering tests: the goal of the test is to measure the ability of student to understand scientific subjects and engineering principles, recall, relate and interpret as well as the ability to analyse data and use it to diagnose engineering problems. This can be done using the followings:

b-1- Connectivity Test / Open Questions.

b-2- Questions that have a definite answer.

c) Other tests:

c-1- Seminars.

c-2- Academic debate, oral dialogue, semester and final theoretical and practical written examinations.

c-3- Writing reports

c-4- Field visits.



## 8. The teaching staff

Teaching staff						
		Special requirements/skills (if applicable)		specialty		Academic rank
lecturer	employee			Exact	general	
	√			Thermal Applied	Aviation Engineering	Prof. Dr . Iyd Eqqab Maree
	√			Medicinal chemistry	Chemical Engineering	Prof.Dr.Hazim Abed Mohammed
	√			Mechatronics	Electrical and electronic engineering	Ass.Prof.Dr..Abd Alsalam Taha Hussein
	√			Environment and pollution control	Mechanical Engineering	Ass.Prof.Dr. Salah Farhan Abd
	√			Power Electronics	Electrical Engineering	Ass.Prof.Dr. Hussein Ibzar zainal
	√			Electronic and communications	Electronic and communications engineering	Dr. Fares Hassan Taha
	√			Electrical Station	Hydroelectric Engineering	Dr. Moayad Bilal Othman
	√			Communication	Communications Engineering	Dr. Mohammed Fadhel
	√			Mechatronics	Mechatronics Engineering	Dr. Shouket Abdulrahman Ahmed
	√			Communication	Electronic Engineering	L. Ali Hilal Mutlaq
	√			Applied Embryology	Biological Sciences	A.L Shuker Ramdan
	√			Communication	Communications Engineering	A.LRafal Hazim
	√			Electricity	Electrical and Computer	A.L Maryam

					Engineering	Karem
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<b>9. Professional development</b>
<b>Orienting new faculty members</b>
Training and development of professors: By providing training programs and workshops for faculty members to develop their educational skills and update their academic knowledge in the field of Medical Instrumentation Techniques Engineering which enhances the quality of teaching and learning in the specialty.
<b>Professional development for faculty members</b>
Professional development for faculty members is considered important to enhance their competence and improve their performance in the field of Medical Instrumentation Techniques Engineering Engineering. Faculty can develop their skills by attending workshops and training courses, and participating in educational seminars and conferences. They can also exchange knowledge and experiences with colleagues in the field of Medical Instrumentation Techniques Engineering Engineering, and use technology to improve the teaching process. This helps them innovate and improve the quality of education they provide to students.

<b>10. Acceptance criterion</b>
Students in the department Medical Instrumentation Techniques Engineering. are accepted from graduates of preparatory studies in its scientific stream, with a grade of 60 %, and the graduation requirements are:
<ul style="list-style-type: none"> <li>- Performing 196 course hours over the years of study.</li> <li>- Passing the prescribed exams with a grade of 50 % or more</li> <li>- Performing summer training before the final stage.</li> <li>- Submitting graduation research in one of the specialty topics.</li> </ul>

<b>11. The most important sources of information about the program</b>
Iraqi government universities and international universities related to the specialty.

<b>12. Program development plan</b>
A. Analyze the current situation: This can be done by evaluating the current curriculum and analyzing its strengths and weaknesses and searching for opportunities for improvement and identify areas that need development.

- B. Setting goals: Setting the main goals for developing the academic curriculum is considered one of the most important steps in developing any program, as the goals can include increasing educational quality, improving the student experience and enhancing academic and personal developments.
- C. Continuous evaluation and review: By conducting periodic evaluation and review of the curriculum and teaching methods and communicating with students and professors to collect observations and comments. Use this feedback to improve and enhance your academic curriculum.

### 13. Curriculum Skills Map

please tick in the relevant boxes where individual Program Learning Outcomes are being assessed

Thinking Skills				Subject-specific skills		Knowledge And understanding				Core / Option	Course Title	Course Code	Year/ Level
√	√			√	√			√	√	Specialist	Mathematic	MITE20181	<b>Second Year</b>
√	√	√	√	√	√	√	√	√	√	Specialist	Anatomy	MITE20182	
		√	√	√	√	√	√	√	√	Specialist	chemistry Clinical equipment	MITE20183	
		√	√	√	√	√	√	√	√	Specialist	Electronic circuit and company	MITE20184	
	√	√	√	√	√	√	√	√	√	Specialist	Logic Technology	MITE20185	

		√	√	√	√	√	√	√	√	Specialist	Medical Instrumentation and Measurements	MITE20186		
√	√	√	√	√	√	√	√	√	√	Specialist	Medical instrument 1	MITE20187		
	√	√	√	√	√	√	√	√	√	Auxiliary	Computer Application	MITE20188		
		√	√	√	√	√	√	√	√	Auxiliary	English Language 2	MITE20189		
√	√	√	√	√	√	√	√	√	√		WorkShop	MITE20190		
		√	√	√	√	√	√	√	√	Specialist	Medical Electronic Systems	MITE20191		<b>Third year</b>
			√	√	√	√	√	√	√	Specialist	Digital Signal Processing (DSP)	MITE20192		
√	√	√	√	√	√			√	√	Specialist	Medical communication system	MITE20193		
	√	√	√	√	√	√	√	√	√	Specialist	Medical instrument 2	MITE20194		
	√	√	√	√	√		√	√	√	Specialist	microprocessor	MITE20195		

		√	√	√	√	√	√	√	√	Specialist	Power Electronic	MITE20196	
		√	√	√	√	√	√	√	√	Specialist	Electrical Technology	MITE20197	
	√	√	√	√	√	√	√	√	√	Auxiliary	Computer Application	MITE20198	
		√	√	√	√	√	√	√	√	Auxiliary	English Language 3	MITE20199	
√	√	√	√	√	√	√	√	√	√		WorkShop	MITE20200	
√	√	√	√	√	√	√	√	√	√	Specialist	Medical instrument 3	MITE20201	
√	√	√	√	√	√			√	√	Specialist	Control systems	MITE20202	
	√	√	√	√	√	√	√	√	√	Specialist	Radiation Instrumentation Engineering	MITE20203	
√	√	√	√	√	√			√	√	Specialist	Medical Laser Systems	MITE20204	
	√	√	√	√	√	√	√	√	√	Specialist	Advanced digital design	MITE20205	
√	√	√	√	√	√			√	√	Auxiliary	Computer applications	MITE20206	

√	√	√	√	√	√			√	√	Specialist	Projects administration	MITE20207	
√	√	√	√	√	√			√	√	Specialist	Project	MITE20208	
√	√	√	√	√	√			√	√	Auxiliary	English Language	MITE20209	

**•Please check the boxes corresponding to the individual learning outcomes from the program subject to evaluation**

