

دليل البرنامج الدراسي 2025 - 2026 | Program Catalogue

**URUK University**

جامعة اوروك



***Sixth Cycle – Bachelor’s Degree (B.Sc.) –***

***Department of Medical Instrumentation***

***Techniques Engineering***

بكالوريوس - قسم هندسة تقنيات الاجهزة الطبية



## Academic Program Description Form

University Name: URUK University  
College / Institute: Engineering Technical College  
Department: Medical Instrumentation Techniques Engineering  
Academic or Professional Program Name: Bachelor's Degree  
Final Degree Name: Bachelor's Degree in Medical Instrumentation Techniques Engineering  
Study System: Bologna (First Level + Second Level +Third Level)  
Date of Preparation of Description: 16-3-2026  
Date of File Completion: 11-4-2026

Signature:



Signature:



Head of Department Name: Lect. Dr. Fadhil  
Abbas Al-Qrimli

Scientific Associate Name: Asst. Prof. Dr. Falih  
Hamzah Edan

Date: 11/4/2026

Date: 11/4/2026



File Reviewed by

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Lect. Dr. Saadiyah Hasan Halos

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Authentication by the Dean:

Prof. Waleed Ameen Al-Jawher

12/4/2026

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### 1. Mission & Vision Statement

#### ***Vision Statement***

The vision of the Department of **Medical Instrumentation Techniques Engineering** is to prepare students to become applied engineers familiar with contemporary medical equipment engineering technology. Moreover, it offers the latest study programs to keep pace with the scientific departments corresponding to the Department of medical equipment technology engineering in respected Arab and international universities, as well as the academic environment and community services that keep pace with the rapid development in the field of medical devices.

#### ***Mission Statement***

Through cutting-edge educational programs and curricula that highlight the importance of this discipline, the Department of technical engineering of medical devices aims to provide students with an educational, technical and research environment. Providing practical and scientific methods and advanced applied research to imitate the requirements of the labor market, acceptance of medical facilities, and help improve the health status at the global and regional level.

### 2. Program Specification

<b>Program code:</b>	BSc- MITE	<b>ECTS</b>	240
<b>Duration:</b>	4 levels, 8 Semesters	<b>Method of Attendance:</b>	Full Time

Specifications of the Medical Instrumentations Techniques Engineering program pour into the field of knowledge and skills necessary for the profession of installation, calibration, and maintenance of medical instruments. This program focuses on the development of technical expertise in the medical

device sector, new medical technologies, hospital management, and Medical Device Maintenance. The program consists of classroom lectures, practical training, and on-site work. In addition to developing technical skills such as electrical circuit design, computer-aided design, microprocessor programming and medical project management. The program also aims to provide graduates with the necessary skills to work as medical device engineers, medical engineering team leaders, medical device inspectors, cost estimators, and other technical positions in the field of medical technical engineering

### **3. Program Goals**

1. Giving program graduates the scientific and practical abilities required to identify biomedical device failures.
2. Educate students to comprehend medical device components and handle them effectively while staying up to date with industry technical advancements.
3. Giving students a thorough understanding of contemporary technologies utilized in medical device engineering.
4. Improving the graduates' capacity to update and develop medical gadgets in accordance with the requirements of healthcare facilities.
5. The department aims to meet academic quality criteria that are appropriate for the resources at hand.

### **4. Student Learning Outcomes**

Students who successfully complete the MITE program will have a strong foundation in medical devices and be ready for a range of careers. Graduates have expertise in the creation, design, testing, and upkeep of medical devices and equipment. Additionally, they can determine the critical impact that medical technology advancements have played in the development of the modern healthcare system. They can obtain accurate and pertinent content for presentations, reports, etc. which use information, internet, and communication technologies to fulfill academic needs. They can converse in a second language. Additionally, they can write and speak to a wide range of audiences. Furthermore, the capacity for transparent and engaging communication with non-experts.

#### **Outcome 1**

##### ***Understanding of allied knowledge***

Graduates will be able to demonstrate a deep understanding of the knowledge, capabilities and competence that the market needs. They are also familiar with developments in technology and business.

#### **Outcome 2**

##### ***Oral and Written Communication***

Graduates will be able to use their oral and written communication abilities to professionally convey the results of medical device troubleshooting.

#### **Outcome 3**

##### ***Technical and cognitive skills***

Graduates can create applications to examine or control the results and construct circuits for medical equipment based on predetermined parameters.

#### **Outcome 4**

##### ***Critical thinking and analytical skills***

Graduates will be able to recognize new issues and attempt to address them utilizing modeling, designing, and forecasting techniques based on logical and critical thinking.

#### **Outcome 5**

##### ***Appropriate research tools and techniques***

Graduates will be able to use basic research techniques to carry out a variety of scientific applications. To achieve the intended outcomes, the graduate might adjust and pick up new abilities.

#### **Outcome 6**

##### ***Communications and IT skills***

In order to identify the best solution, graduates can exchange information with the technical team. They can also make use of communication, information, and internet technology. Graduates can read and understand instructions and user manuals for a variety of medical devices. They use a variety of medical phrases in English to interact with non-experts while demonstrating understanding of varied informational levels and viewpoints.

#### **Outcome 7**

##### ***Group/team leadership***

Graduates will be self-driven, collaborate well with professionals from various fields, backgrounds, and interests to solve issues, work clearly under pressure in perplexing situations, and exhibit knowledge of and dedication to adhering to safety protocols for both themselves and others

#### **Outcome 8**

##### ***Own professional development***

Graduates can plan, solve problems, make decisions, and maintain current professional knowledge.

## 5. Academic Staff

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## 6. Credits, Grading and GPA

### Credits

URUK University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 30 hrs. student workload, including structured and unstructured workload.

### Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

GRADING SCHEME				
مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
Number Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

### **Calculation of the Cumulative Grade Point Average (CGPA)**

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

CGPA of a 4-year B.Sc. degree:

$$\text{CGPA} = [ (1^{\text{st}} \text{ module score} \times \text{ECTS}) + (2^{\text{nd}} \text{ module score} \times \text{ECTS}) + \dots ] / 240$$

## **7. Curriculum/Modules**

**Semester 1 | 30 ECTS | 1 ECTS = 25 hr.**

No.	Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
1	MITE1101	Fundamentals of Electrical Engineering (DC)	79	71	6	C	
2	MITE1102	Computer Applications	49	26	3	B	
3	MITE1103	Differential Mathematics	78	47	5	B	
4	MITE1104	Engineering Drawing	63	62	5	B	
5	MITE1105	Democracy and Human Rights	33	17	2	S	
6	MITE1106	English Language 1	33	17	2	S	
7	MITE1107	Medical chemistry	94	81	7	S	

**Semester 2 | 30 ECTS | 1 ECTS = 25 hr.**

No.	Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
1	MITE1202	Fundamentals of Electrical Engineering (AC)	79	71	6	C	Fundamentals of Electrical Engineering (DC)
2	MITE1201	Medical Physics	64	61	5	B	
3	MITE1203	Mechanics	48	52	4	B	
4	MITE1204	Integral Mathematics	78	47	5	B	Differential Mathematics
5	MITE1205	Engineering Workshops	63	62	5	B	
6	MITE1206	Arabic Language	33	17	2	S	
7	MITE1207	Computer Programming and Applications I	49	26	3	s	

**Semester 3 | 30 ECTS | 1 ECTS = 30 hr.**

No.	Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
1	MITE2101	Laboratory Medical Instrumentation I	74	106	6	C	
2	MITE2102	Electronics Circuits I	74	106	6	C	Fundamentals of Electrical Engineering
3	MITE2103	Electrical Machines	74	76	5	C	Fundamentals of Electrical Engineering
4	MITE2104	Engineering Mathematics	73	77	5	B	Integral Mathematics
5	MITE2105	Anatomy and Physiology	74	76	5	B	
6	MITE2106	Computer Programming and Applications (MATLAB-beginner)	46	44	3	B	

**Semester 4 | 30 ECTS | 1 ECTS = 30 hr.**

No.	Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
1	MITE2201	Electronics Circuits II	74	106	6	C	Electronics Circuits I
2	MITE2202	Laboratory Medical Instrumentation II	74	106	6	C	Laboratory Medical Instrumentation I
3	MITE2203	Digital Electronics	74	76	5	C	Electronics Circuits I
4	MITE2204	Clinical Chemistry Instrumentation	60	90	5	C	
5	MITE2205	Biomedical Transducers and Sensors	60	90	5	C	Fundamentals of Electrical Engineering
6	MITE2206	English Language (Intermediate Level)	45	45	3	B	English Language (Beginner Level)

**Semester 5 | 30 ECTS | 1 ECTS = 30 hr.**

No.	Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
1	MITE3101	Medical Diagnostic Instrumentation I	74	136	7	C	Anatomy and Physiology
2	MITE3102	Microprocessor	88	92	6	C	Digital Electronics
3	MITE3103	Electromagnetic Fields	74	106	6	C	Engineering Mathematics
4	MITE3104	Signal and Systems	60	60	4	C	Engineering Mathematics
5	MITE3105	Computer Programming and Applications (C++ Programming)	60	60	4	B	
6	MITE3106	English Language (Advanced Level)	45	45	3	B	English Language (Intermediate Level)

**Semester 6 | 30 ECTS | 1 ECTS = 30 hr.**

No.	Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
1	MITE3201	Medical Diagnostics Instrumentation II	74	136	7	C	Medical Diagnostic Instrumentation I
2	MITE3202	Medical Electronic Systems	74	106	6	C	Electronics Circuits II
3	MITE3203	Medical Communication Systems	60	120	6	C	Signals and Systems
4	MITE3204	Power Electronics	74	76	5	C	Electronics Circuits I
5	MITE3205	Project I	30	60	3	C	
6	MITE3206	Project Management	45	45	3	S	

## **8.Contact**

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