

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

Academic Program Specification
and Course
Description GuideForm for the
2026-2025 Academic Year

2026-2025

TEMPLATE FOR PROGRAMME SPECIFICATION

Bachelor of Science in Medical Device Engineering Technology

PROGRAMME SPECIFICATION

The program graduates engineers in the specialization of Medical Technology. Graduated students can help in recognizing the country's needs for development and progress. They can meet the requirements in both state institutions and industry sectors.

1. Teaching Institution	Al-Kitab University
2. University Department/Centre	Department of Medical Engineering Technology / College of Engineering Technology.
3. Program Title	Medical Device Technical Engineering
4. Title of Final Award	B. Sc. in Computer Technical Engineering (Computer Network Communication) or (Computer Electronics).
5. Modes of Attendance offered	<ol style="list-style-type: none">1. Full Time (Morning and Evening) / Yearly System for the 2nd, 3rd, and 4th levels.2. Bologna System / full-time – semester-wise – Started this year for level one.
6. Accreditation program	A program decided by the Ministry of Higher Education and Scientific Research
7. Other external influences	Non
8. Date of production/revision of this specification	Revised on 29 th October 2023

9. Aims of the Program

The aim of the program is as follows:

- 1- Provide graduates with scientific knowledge of thinking and analysis that can meet the needs of country institutions and manufacturing sectors, enabling them to pursue their higher studies and adapt the recent developments in world technology.
- 2- Develop a new generation of engineers, and prepare a future scientific leader in the field of computer technology engineering that can strengthen the position of al Kitab University in various fields, especially in the Medical Field.
- 3- Emphasize a strong foundation in scientific knowledge, especially in the field of medical technology engineering, and constantly strive to support them in various fields to enable them to solve problems, and possess the medical skills necessary to get progress in their field provide quality services to society in various aspects.
- 4- Provide an appropriate academic environment for study and research to contribute in finding the solutions for engineering problems using appropriate techniques, in addition to actively contributing in deepening and documenting the department's relationship with society by implementing advisory work, training and developing teaching and administrative human resources.

10. Learning Outcomes, Teaching, Learning, and Assessment Methods

A. Learning outcome

- a) Knowledge and Understanding outcome: People who graduated from the program have the following skills;
 - a-1- A high level of understanding and knowledge in building, analyzing, and developing medical systems.
 - a-2- They can analyze engineering and scientific problems by applying suitable laws in science, mathematics, and engineering, and 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 techniques and engineering.

a-5- The student should be able to do scientific and applied research in medical engineering techniques fields for the purpose of solving industrial problems.

b) Subject-specific skills

b-1 - The ability to use the techniques and tools of medical engineering in its two branches of networks and electronics.

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, medical, and information technology skills

d2 – Co-operation and teamwork skill.

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

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

B. Teaching and Learning Methods

There are many teaching and learning methods used in the Department of Computer Technology Engineering, Computer Communication Networks Branch and Computer Electronics Branch. The learning is done through practical applications, and theoretical lectures using traditional board teaching, PPT presentation, discussion groups, and seminars, and student is 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, and 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 student to recognize and assimilate engineering facts. This can be done using the following:

- 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 the 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 following:

- 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, and semester and final theoretical and practical written examinations.

c-3- Writing reports

c-4- Field visits.

11. Program Structure

Level / Year	Course or Module Code	Course or Module Title	Weekly Hours		Credits
			T	P+O	
First Level – Bologna System	Semester 1	Mdet101-S1	4.93	6.73	7
		Mdet102-S1	3	4.4	5
		MDet103-S1	4.2	6	6
		MDET104-S1	3	2	3
		Mdet105-S1	4	7	7
		Mdet106-S1	2	0.56	2
	Semester 2	Mdet101-S2	4.93	6.73	7
		Mdet102-S2	3	4.4	5
		Mdet103-S2	4	5.9	6
		Mdet104-S2	2	3	3
		Mdet105-S2	4	7	7
		Mdet106-S2	1	1.12	2
	Second	Mde2201	3	0	6
		Mdet2202	2	2	6
		Mdet2203	3	2	7
		Mdet2204	2	2	4
		MDE2205	2	2	6

12. Awards
and Credits
Required
units = 174
For B. Sc.
degree

	Mdet2206	Instrumentation and Measurements	3	2	7	
	Mde2207	Medical instrument 1	3	2	7	
	MdeE2208	Computer Application	2	1	4	
	Mde2209	English Language 2	1	-	2	
Third	Mde2301	Medical Electronic Systems	2	2	6	
	Mde2302	Digital Signal Processing (DSP)	2	2	6	
	Mde2303	Medical communication system	2	2	6	
	Mde2304	Medical instrument 2	2	3	7	
	Mde2305	Electrical Technology	2	2	4	
	Mde2306	Microprocessor	2	2	6	
	Mde2307	Power Electronic	2	2	6	
	Mde2308	Computer Application	1	2	4	
	MDE2309	English Language 3	1	0	2	
				-		
Fourth	Mde2401	Medical instrument 3	3	2	6	
	Mde2402	Control systems	2	2	6	
	Mde2403	Radiation Engineering	2	2	6	
	Mde2404	Leaser Engineering	2	2	6	
	Mde2405	Advanced digital design	2	2	6	
	Mde2406	Project Management	2		4	
	Mde2407	Computer Application	1	2	4	
	Mde2408	Project	6		6	
	Mde2409	English Language	1	-	2	
	Mde24010	Professional ethics	1	-	2	

12. Planning for Personal Development

Department of Medical Technology Engineering focus on continuous improvement. It is always seeks improving the scientific and administrative process and try to overcome all difficulties and obstacles that hinder the educational program. This can be done by the development of human resources and the personality of employees. The following procedures illustrate the steps implemented or in the process to implement in this field:

1. Continuous improvement and development of faculty members through training programs and workshops inside and outside the department, university and country.

2. Increase national and international extracurricular activities such as holding scientific conferences, seminars and sports activities
3. Encourage faculty members to obtain the highest scientific and administrative ranks.
4. Provide the library with recent resources and modern books to keep contact with the rapid progress in engineering sciences.
5. Provide specialized software in computer technology engineering and computers along with internet lines for teachers.

14. Admission criteria.

The Department of Medical Technology Engineering subject to the working mechanism of Central Admission Department at the Ministry of Higher Education and Scientific Research where the graduates of the preparatory school (the scientific branch) are nominated for admission to the department.

15. Key sources of information about the program

The main source for information about medical technology engineering department are as follows:

- The curriculum is approved by the Ministry of Higher Education and Scientific Research.
- Courses in teaching methods.
- Courses in civil society organizations.
- Internet.
- Personal experiences.

Curriculum Skills Map

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

Year/ Level	Course Code	Course Title	Core / Option	Knowledge And understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
Level One - Bologna System	Semester 1	BCTE101-S1	C	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	
		BCTE102-S1	Basic	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√
		BCTE103-S1	C	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		BCTE104-S1	C	√	√	√	√	√	√	√	√	√	√	√		√	√	√	
		BCTE105-S1	C	√	√	√	√	√	√	√	√	√	√			√	√	√	√
		BCTE106-S1	Supple ment	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Semester 2	BCTE101-S2	C	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		BCTE102-S2	Basic	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		BCTE103-S2	C	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
		BCTE104-S2	C	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√

		BCTE105-S2		C	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	
		BCTE106-S2		Supple ment																	
Second	MDE2201	Mathematic	C	√	√	√		√	√	√		√	√	√		√	√	√	√	√	
	MDE2202	Anatomy	C	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√		
	MDE22203	Electronic circuit and company	C	√	√	√	√	√	√	√		√	√	√		√	√	√	√	√	
	MDE2204	Logic Circuit	C	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	
	MDE2205	Instrumentation and Measurements	C	√	√	√	√	√	√	√	√	√	√			√	√	√	√	√	
	MDE2206	Clinical chemistry	C	√	√	√	√	√	√	√		√	√			√	√	√	√	√	
	MDE2207	Medical instrument1	C	√	√	√	√	√	√	√		√	√	√		√	√	√			
	MDE2208	Computer Application	C	√	√	√	√	√	√	√		√	√	√		√	√	√			
	MDE2209	English Language2																			
Thi rd																					
	MDE2301	Medical Electronic Systems	C	√	√	√	√	√	√	√	√	√	√	√			√	√	√	√	

	MDE2302	Digital Signal Processing (DSP)	C	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	MDE2303	Medical communication system	C	√	√	√	√	√	√	√	√	√	√			√	√	√	√
	MDE2304	Medical instrument 2	C	√	√	√	√	√	√			√				√	√	√	
	MDE2305	Electrical Technology	C	√	√			√	√	√	√	√	√	√	√	√	√	√	√
	MDE2306	Power Electronic	C	√	√	√	√	√	√	√		√	√	√		√	√	√	
	MDE2307	Computer Application	C	√	√	√		√	√	√		√	√	√		√	√	√	
	MDE2308	Microprocessor	O	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	MDE2309	English Language 3	C																
Forth	CTE20310	Medical instrument 3	C	√	√	√	√	√	√	√	√	√	√			√	√	√	√
	CTE20302	Control systems	C	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	CTE20303	Radiation Engineering	C	√	√	√	√	√	√	√	√	√	√			√	√	√	√
	CTE10311	Leaser Engineering	C	√	√	√	√	√	√	√		√	√	√		√	√	√	

[illegible]