



Program Specification (2026)

1. Basic Information

Program Title (according to what is stated in the bylaw):	Technology of Biomedical Equipment
Total number of credit hours/points of the program:	127
Number of academic years/levels (expected program duration):	3+first general level
Department (s) Participating (if any) in teaching the program:	Technology of Medical Laboratories, Radiology, Dental Prostheses Manufacture, Optics and Respiratory Therapy
Faculty/Institute:	Applied Health Sciences Technology
University/Academy:	Menoufia University
Program majors/divisions/tracks/specialties in the final year (if any):	-----
Partnerships with other parties and the nature of each (if any):	Collaboration protocols/ Siemens Healthineers/ Imed/ MPCS
Name of the program coordinator (attach the assignment decision):	Prof. Dr. Ghada El-Banby
Program Specification Approval Date:	8/5/2025
Council responsible for Program Specification Approval (Attach the Decision / Minutes):	Faculty Council



2. Program Aims (Brief description of the overall purpose of the program)

The **Biomedical Equipment Technology Program** aims to prepare competent technologists who can integrate engineering and health sciences to ensure the safe, efficient, and innovative use of medical technologies in healthcare facilities.

The program seeks to:

1. Provide students with a strong foundation in biomedical engineering principles, medical electronics, instrumentation, and healthcare systems.
2. Develop the ability to design, operate, calibrate, and maintain medical equipment in accordance with national and international standards.
3. Foster analytical, problem-solving, and critical-thinking skills to address clinical and technical challenges in healthcare environments.
4. Promote professional ethics, integrity, and responsibility, emphasizing patient safety, infection control, and quality assurance in all biomedical practices.
5. Encourage creativity and innovation in the design and adaptation of biomedical systems that meet the evolving needs of modern healthcare.
6. Prepare graduates for effective communication, teamwork, and leadership in interdisciplinary healthcare and engineering environments.
7. Support lifelong learning, scientific research, and continuous professional development to keep pace with technological advances in healthcare.
8. Contribute to public health improvement and sustainable healthcare practices through the safe and ethical application of biomedical technologies.

3. Program Structure (Curriculum)

• Program Components

Requirement Category/Type	Number of Courses	Number of Credit Hours/Points	Percentage from the total number of hours/points
University Requirements	2	2	%1.5
Faculty/College Requirements (if applicable)	22	40	%31.5
Program Requirements	25	85	%66.92
Requirements of the majors/ divisions/ tracks/ specializations in the final year (if any)	----	----	-----



Other requirements	Field Training	-----	-----	----
	Graduation Project	-----	-----	-----
	Mandatory training year	-----	-----	-----
	Other (to be mentioned)	-----	-----	-----
Total Compulsory Courses		43	121	%95.27
Elective Courses		6	6	%4.72
Total		49	127	%100

• Program courses according to the expected study plan

Academic Level	Semester	Course Code	Course Title	Course Type (Compulsory / Elective)	Requirement Category/ Type	Number of Credit Hours/ Points	Number of Weekly Hours		
							Theoretical teaching	Practical training	field
الاول	فصل دراسي اول	OFRET101	English Language & Terminology	اجباري	كلية	2	2	-	-
الاول	فصل دراسي اول	OFRPY102	Basic physics	اجباري	كلية	2	2	-	-
الاول	فصل دراسي اول	OFRMA103	Mathematics	اجباري	كلية	2	2	-	-
الاول	فصل دراسي اول	OFREE104	Introduction to electrical Engineering	اجباري	كلية	3	2	1	-
الاول	فصل دراسي اول	OFRCS105	Basic Computer Skills	اجباري	كلية	2	1	2	-
الاول	فصل دراسي اول	OFRME106	Mechanics	اجباري	كلية	2	2	-	-
الاول	فصل دراسي اول	UR 01	Introduction to Quality	اجباري	جامعة	1	0	-	-
الاول	فصل دراسي ثاني	OFREC111	Electronic circuits & devices	اجباري	كلية	3	2	2	-
الاول	فصل دراسي ثاني	OFRAH112	General Anatomy and histology For Technologists	اجباري	كلية	3	2	2	-
الاول	فصل دراسي ثاني	OFRGP113	General Physiology For Technologists	اجباري	كلية	3	2	2	-
الاول	فصل دراسي ثاني	OFRGM114	General Microbiology	اجباري	كلية	3	2	2	-
الاول	فصل دراسي ثاني	OFRGC115	General Chemistry	اجباري	كلية	3	2	2	-
الاول	فصل دراسي ثاني	OFRCP001	Effective communication and presentation skills	اجباري	كلية	1	1	-	-
الاول	فصل دراسي ثاني	UR02	Human right and fighting corruption	اجباري	جامعة	1	1	-	-
الثاني	فصل دراسي اول	BEBM201	Biomaterial	اجباري	تخصص	2	1	1	-



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الثاني	فصل دراسي اول	BSME200	Mechatronics Engineering	اجباري	كلية	2	1	1	-
الثاني	فصل دراسي اول	BEDC202	Digital circuits & systems	اجباري	تخصص	3	2	1	-
الثاني	فصل دراسي اول	BECP203	Computer programming(1)	اجباري	تخصص	3	2	1	-
الثاني	فصل دراسي اول	BEME204	Medical Electronics	اجباري	كلية	4	2	1	1
الثاني	فصل دراسي اول	OFRSR002	Basics of Scientific Research	اجباري	كلية	1	2	-	-
الثاني	فصل دراسي اول	EFR01	Elective Faculty Requirements	اختياري	كلية	1	1	-	-
الثاني	فصل دراسي ثاني	BEBE211	Introduction to Biomedical Engineering	اجباري	تخصص	3	3	-	-
الثاني	فصل دراسي ثاني	BEBR212	Biomechanics & rehabilitation	اجباري	تخصص	3	2	1	-
الثاني	فصل دراسي ثاني	BEME213	Technical principles of medical Instruments	اجباري	تخصص	4	3	1	-
الثاني	فصل دراسي ثاني	BEEM214	Electrical machines & power electronics	اجباري	تخصص	5	3	1	1
الثاني	فصل دراسي ثاني	EFR02	Elective Faculty Requirements	اختياري	كلية	1	1	-	-
الثالث	فصل دراسي اول	BEAL301	Automation in clinical laboratories	اجباري	تخصص	3	-	-	-
الثالث	فصل دراسي اول	BECP302	Computer programming (2)	اجباري	تخصص	4	3	1	-
الثالث	فصل دراسي اول	BETP303	Therapeutic & Prosthetic Devices (1)	اجباري	تخصص	4	2	1	1
الثالث	فصل دراسي اول	EFR03	Elective Faculty Requirements	اختياري	كلية	1	1	-	-
الثالث	فصل دراسي ثاني	BEIE311	Instruments & electrical measurement	اجباري	تخصص	3	2	1	-
الثالث	فصل دراسي ثاني	BEMC312	Microcontroller (1)	اجباري	تخصص	4	3	1	-
الثالث	فصل دراسي ثاني	BETP313	Therapeutic & Prosthetic Devices (2)	اجباري	تخصص	4	2	1	1
الثالث	فصل دراسي ثاني	BEPS314	Physiologic signal instrumentation	اجباري	تخصص	4	2	1	1
الثالث	فصل دراسي ثاني	EFR04 BECL401	Elective Faculty Requirements	اختياري	كلية	1	1	-	-
الرابع	فصل دراسي اول	BECL401	Clinical Laboratory instrumentation	اجباري	تخصص	3	2	1	-
الرابع	فصل دراسي اول	BEMC402	Microcontroller (2)	اجباري	تخصص	3	2	1	-
الرابع	فصل دراسي اول	BEBM403	Biomedical modeling & simulation	اجباري	تخصص	4	3	1	-
الرابع	فصل دراسي اول	BEBI404	Biomedical imaging equipment (1)	اجباري	تخصص	4	2	1	1



الربع	فصل دراسي اول	OFRHM004	Hospital management	اجباري	كلية	1	1	-	-
الربع	فصل دراسي اول	EFR05	Elective Faculty Requirements	اختياري	كلية	1	1	-	-
الربع	فصل دراسي ثاني	BEBO411	Biomedical optics	اجباري	تخصص	4	3	1	-
الربع	فصل دراسي ثاني	BEBI412	Biomedical imaging equipment (2)	اجباري	تخصص	3	2	1	-
الربع	فصل دراسي ثاني	BEFD413	Fault detection & preventive maintenance program	اجباري	تخصص	3	2	1	-
الربع	فصل دراسي ثاني	BECE414	Calibration of biomedical Equipment	اجباري	تخصص	3	2	1	-
الربع	فصل دراسي ثاني	BEGP415	Graduation project	اجباري	تخصص	3	1	2	-
الربع	فصل دراسي ثاني	EFR06	Elective Faculty Requirements	اختياري	كلية	1	1	-	-

* A separate schedule of elective courses can be added if they are not related to a specific level of study, or according to the nature of the program

4. Academic Standards

- **Adopted Academic Standards (NARS/ARS): ARS**
 - * When adopting ARS: The matrix of the academic reference standards (ARS) with the national academic reference standards (NARS) must be attached
- **Date of Adoption of Standards in the governing Council: 5/8/2022**
 - * Decision/Minutes of the governing Council to be attached



5. Matrix of Academic Standards (Program Outcomes POs) with Courses

Code	Course Name	P 1	P 2	P 3	P 4	P 5	P 6	P 7	Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	R 1	R 2	R 3	R 4	R 5	R 6	S 1	S 2	S 3	S 4	S 5	T 1	T 2	T 3	T 4	
OFRET 101	English Language & Terminology																					✓					✓	✓			
OFRPY 102	Basic physics										✓						✓	✓													
OFRMA 103	Mathematics																✓											✓			
OFREE 104	Introduction to electrical Eng.								✓	✓								✓													
OFRCS 105	Basic Computer Skills									✓							✓														
OFRME 106	Mechanics					✓											✓											✓			
UR 01	Introduction to Quality																							✓	✓	✓					
OFREC 111	Electronic circuits & devices								✓	✓		✓						✓													
OFRAH 112	General Anatomy & Histology	✓	✓																												
OFRGP 113	General Physiology	✓	✓																												
OFRGM 114	General Microbiology	✓	✓	✓																											
OFRGC 115	General Chemistry																	✓	✓												
OFRCP 001	Effective communication & presentation	✓																											✓		✓
UR02	Human rights & fighting corruption							✓																✓							✓
BEBM2 01	Biomaterial													✓						✓										✓	
BSME20 0	Mechatronics Engineering					✓			✓	✓		✓				✓															
BEDC20 2	Digital circuits & systems								✓	✓		✓																			
BECP20 3	Computer programming (1)									✓							✓								✓						



6. Brain storming
7. Self-learning
8. Research and Reporting
9. Computer simulation
10. Team Work

7. Student Assessment strategies/methods to verify and ensure students' acquisition of Program Outcomes:

1. Mid Term Examination (written)
2. Formative (quizzes- presentation -reports)
3. Lab/Oral experiments exam
4. Final Term Examination (written)

8. Program Key Performance Indicators (if any)

No.	Key Performance Indicator	Measurement Methods	Measurement Timing	Target Level (Last year)	Achieved Level (for the current year)	New Target Level (for the next year)
1	Program Enrollment Rate	Admission and registration statistics	Starting of academic year	500	490	600
2	Graduation Rate	Academic records	End of academic year	98.8%	97.22%	99%
3	Student Satisfaction with the Program	Student survey and feedback forms	End of each academic year	82.3%	89.9%	95%

Name & Signature
Program Coordinator

Pro. Dr. Ghada El-banby

Name & Signature
Vice Dean for Education and Student Affairs

Pro. Dr. Amal salama