

Biomedical Engineering Technology

Credentials

Biomedical Engineering Technologist AAS Degree	66-70 cr.
Biomedical Applications Post-Associate Certificate	16 cr.

Major Description

The biomedical engineering technology programs prepare students to work on sophisticated diagnostic equipment and medical devices in a healthcare setting. Schoolcraft offers two educational options and additional experience opportunities in this exciting field:

- An associate in applied science degree teaches students to maintain and repair medical electronic equipment in hospitals, labs and industries engaged in the manufacture and sale of these products.
- The biomedical applications post-associate certificate is for individuals already working in the field that want to advance their career opportunities by providing additional knowledge and skills needed to meet the demands of the rapidly changing biomedical field.

A state-of-the-art lab enables students to gain first-hand knowledge of troubleshooting equipment and design prototypes. In addition, a two-semester long internship provides additional hands-on field training in one of the area's hospitals. Students must complete internships to be eligible to fulfill program requirements.

Biomedical Engineering Technologist AAS Degree

Schoolcraft program code # AAS.00128

The biomedical engineering technologist (BMET) program is designed to develop technicians able to maintain and service medical electronic equipment in hospitals, pathological and hematological laboratories and industries engaged in the manufacture and sale of medical electronic equipment. The program is divided into two components. The first year (three semesters) culminates in an electronic technology certificate. In order for candidates to be eligible to apply for the second year of the program they must meet the following qualifications:

1. Have an overall GPA of 2.5.
2. Achieve a minimum GPA of 2.5 in each electronics course.
3. Achieve a minimum GPA of 3.0 in Biology 105.

Candidates who have met these conditions must be approved by the BMET Internship Coordinator before registering in BMET 116, BMET 204, BMET 256 or BMET 257. Due to the limited availability of worksites, candidates who have met these conditions will be prioritized for admission into the BMET sequence based on the following elements: BMET application date, overall GPA, position in the sequence of program courses. Students must complete internships to be eligible to fulfill program requirements. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

Not all courses are offered each semester. Students should work with an academic advisor to develop a schedule that will work for them. Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with an academic advisor. Number of credits may vary depending on the course selection.

SAMPLE SCHEDULE OF COURSES

Admission Prerequisites

First Year - Fall Semester

Course #	Course Title	Credits
ELECT 131	Basic Measurement and Reporting Skills	3
ELECT 137	DC Circuits and Mathematical Modeling	5
ENG 101	English Composition 1	3
BIOL 105	Basic Human Anatomy and Physiology	4
	Total Credits: 15	

First Year - Winter Semester

Course #	Course Title	Credits
ELECT 138	AC Circuits and Mathematical Modeling	5
ELECT 139	Diodes and Transistors	3
ELECT 180	LabVIEW Programming CORE 1 and 2	5
	Total Credits: 13	

Biomedical Engineering Technologist AAS Degree (continued)

First Year - Spring/Summer Session

Course #	Course Title	Credits
ELECT 215	Operational Amplifiers and Linear Integrated Circuits	4
ELECT 219	Digital Logic Circuits	4
	Total Credits: 8	

Admission to the Biomedical Program Internship Sequence Second Year - Fall Semester

Course #	Course Title	Credits
BMET 116	Biomedical Instrumentation Terminology and Safety 1	3
MATH 102	Technical Mathematics	4
Social Science	Select General Education Social Science course	3-4
PSYCH 153	Human Relations (recommended)	
English	Select one:	3
ENG 102	English Composition 2	
ENG 116	Technical Writing	
	Total Credits: 13-14	

Second Year - Winter Semester

Course #	Course Title	Credits
BMET 204	Biomedical Instrumentation Terminology and Safety 2	4
BMET 256	Biomedical Equipment Internship 1	3
Elective	See List	3
Elective	See List	3
Humanities	Select General Education Humanities course	1-4
COMA 103	Fundamentals of Speech (recommended)	
	Total Credits: 14-17	

Second Year - Spring/Summer Semester

Course #	Course Title	Credits
BMET 257	Biomedical Equipment Internship 2	3
	Total Credits: 3	

Biomedical Engineering Technologist AAS Degree (continued)

Electives

Course #	Course Title	Credits
BMET 130	Introduction to Biomedical Imaging	3
CIS 115	Introduction to Computer Based Systems	3
CIS 171	Introduction to Networking	3
CIS 172	Network Security Fundamentals	3
CIS 251	IT Project Management	3
CNT 115	Cybersecurity Fundamentals	3
CNT 130	Computer Hardware and Troubleshooting	3
CNT 173	Computer User Support	3
CNT 179	Physical Networking	3
ELECT 144	Introduction to Microcontrollers	3
ELECT 218	AC/DC Motors	3
ELECT 228	Electronic Troubleshooting	3

PROGRAM TOTAL 66-70 CREDITS

Biomedical Applications Post-Associate Certificate

Schoolcraft program code # PAC.00178

This post-associate certificate in biomedical applications is designed to provide working professionals who have experience and/or training in biomedical engineering opportunities to study new technologies and innovations.

Completion of this program will enhance a professional's ability to meet the demands of rapidly changing technologies in the biomedical field. These courses are also intended to meet requirements for current and future professional certification.

Prior to admission to this program, students must have completed a minimum of an accredited associate degree in biomedical engineering technology. The post-associate certificate is awarded upon successful completion of 16 credit hours.

Not all courses are offered each semester. Students should work with an academic advisor to develop a schedule that will work for them. Number of credits may vary depending on the course selection.

Courses can be taken through independent study. Students may choose an applicable 200-level elective.

Program Courses

A student is required to choose the two courses listed below:

Course #	Course Title	Credits
CIS 171	Introduction to Networking	3
CNT 130	Computer Hardware and Troubleshooting	3

A student may choose from any of the courses listed below:

Course #	Course Title	Credits
BUS 220	Supervision	3
CIS 172	Network Security Fundamentals	3
CIS 178	Technical Microsoft Windows	3
CIS 250	Systems Development and Design	4
CIS 251	IT Project Management	3
CIS 273	TCP/IP and Network Architectures	3
CNT 115	Cybersecurity Fundamentals	3
CNT 173	Wireless Local Area Networks	3
CNT 179	Physical Networking	3
CNT 210	CCNA Networking 1	4
ELECT 144	Introduction to Microcontrollers	3
BMET 130	Introduction to Biomedical Imaging	3
QM 107	Quality Planning and Team Building	3