

BIOMEDICAL ENGINEERING TECHNOLOGY

Credentials

Biomedical Engineering Technologist AAS degree	66-72 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 health-care 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 254 or BMET 255. 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.

SAMPLE SCHEDULE OF COURSES

Admission Prerequisites

First Year-Fall Semester

ELECT 131	Basic Measurement & Reporting	3
ELECT 137	DC Circuits & Mathematical Modeling	5
ENG 101	English Composition 1	3
BIOL 105	Basic Human Anatomy & Physiology	4
Total Credits		15

First Year-Winter Semester

ELECT 138	AC Circuits & Mathematical Modeling	5
ELECT 139	Diodes & Transistors	3
ELECT 180	LabVIEW Programming CORE 1 & 2	5
Total Credits		13

First Year—Spring/Summer Session

ELECT 215	Operational Amplifiers & Linear Integrated Circuits	4
ELECT 219	Digital Logic Circuits	4
Total Credits		8

Admission to the Biomedical Program Internship Sequence

First Year-Fall Semester

BMET 116	Biomedical Instrumentation Terminology & Safety	3
MATH 102	Technical Mathematics	4
Social Science	<i>Select General Education Social Science course</i>	3-4
PSYCH 153	Human Relations (recommended)	
English	<i>Select one</i>	3
ENG 102	English Composition 2	
ENG 116	Technical Writing	
Total Credits		13-14

First Year-Winter Semester

BMET 204	Biomedical Instrumentation Terminology & Safety 2	4
BMET 254	Biomedical Equipment Internship 1	3
Elective	<i>See list</i>	3-4
Elective	<i>See list</i>	3-4
Humanities	<i>Select General Education Humanities course</i>	1-4
COMA 103	Fundamentals of Speech (recommended)	
Total Credits		14-19

Second Year—Spring/Summer Session

BMET 255	Biomedical Equipment Internship 2	3
Total Credits		3

PROGRAM TOTAL 66–72 CREDITS

Biomedical Engineering Technologist AAS Degree (continued)

Electives

BMET 125	Laser Safety Concepts	3	ELECT 145	Fluid Power	4
CIS 115	Introduction to Computer Based Systems	3	ELECT 218	AC/DC Motors	3
CIS 171	Introduction to Networking	3	ELECT 228	Electronic Troubleshooting	3
CIS 176	Visual Basic.Net	3	ELECT 251	Programmable Logic & Industrial Controls	4
CNT 130	Computer Hardware and Troubleshooting	3	MET 103	Introduction to Materials Science	3
ELECT 144	Introduction to Microcontrollers	3			

Not all courses are offered each semester. Students should work with an academic advisor or counselor 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 or counselor. Number of credits may vary depending on the course selection.

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.

Program Courses

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

CIS 171	Introduction to Networking	3
CNT 130	Computer Hardware and Troubleshooting	3

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

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

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

Not all courses are offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them.

Number of credits may vary depending on the course selection.

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