

# PRIDE. CHALLENGE. ACHIEVEMENT.

CREDENTIAL YEAR 2017-18

## 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.

### National Median Salaries for Biomedical Engineering Technology Positions

Biomedical Engineering Technician: \$44,570 (source: US BLS)

### 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.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. 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](mailto:admissions@schoolcraft.edu) to complete an application.

### SAMPLE SCHEDULE OF COURSES

#### Admission Prerequisites

#### First Year—Fall Semester

ELECT 131	Basic Measurement and Reporting	3
ELECT 137	DC Circuits and Mathematical Modeling	5
ENG 101	English Composition	3
BIOL 105	Basic Human Anatomy and Physiology	4
	<b>Total Credits</b>	<b>15</b>

#### First Year—Winter Semester

ELECT 138	AC Circuits and Mathematical Modeling	5
ELECT 139	Diodes and Transistors	3
ELECT 180	LabVIEW Programming CORE 1 and 2	5
	<b>Total Credits</b>	<b>13</b>

#### First Year – Spring/Summer Session

ELECT 215	Operational Amplifiers and Linear Integrated Circuits	4
ELECT 219	Digital Logic Circuits	4
	<b>Total Credits</b>	<b>8</b>



It is the policy of Schoolcraft College that no person shall, on the basis of race, religion, color, gender, age, marital status, disability, sexual orientation, and/or national origin, be subjected to discrimination during or be excluded from participating in or be denied the benefits of any program or activity or in employment.



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## Biomedical Engineering Technologist AAS Degree (continued)

### Admission to the Biomedical Program Internship Sequence

#### Second Year—Fall Semester

#### Second Year—Winter Semester

BMET 116	Biomedical Instrumentation Terminology and Safety	3	BMET 204	Biomedical Instrumentation Terminology and Safety 2	4
MATH 102	Technical Mathematics	4	BMET 254	Biomedical Equipment Internship 1	3
Social Science	Select General Education Social Science course(s)	3-4	Elective*	Select from list	3-4
PSYCH 153	Human Relations (recommended)		Elective*	Select from list	3-4
English	Select one	3	Humanities	Select General Education Humanities course(s)	1-4
ENG 102	English Composition 2		COMA 103	Fundamentals of Speech (recommended)	
ENG 116	Technical Writing			<b>Total Credits</b>	<b>14-19</b>
	<b>Total Credits</b>	<b>13-14</b>			

#### Second Year—Spring/Summer Session

BMET 255	Biomedical Equipment Internship 2	3
	<b>Total Credits</b>	<b>3</b>

#### PROGRAM TOTAL 66–72 CREDITS

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.

#### Electives

BMET 125	Laser Safety Concepts	3	ELECT 145	Fluid Power	4
CIS 171	Introduction to Networking	3	ELECT 218	AC/DC Motors	3
CIS 235	Managing and Troubleshooting PCs	3	ELECT 228	Electronic Troubleshooting	3
COMPS 124	Introduction to Personal Computers and Software	3	ELECT 251	Programmable Logic and Industrial Controls	4
COMPS 126	Technical Programming	3	MET 103	Introduction to Materials Science	3
ELECT 144	Introduction to Microcontrollers	3			

## 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. All courses are not offered each semester. Students should work with an academic advisor or counselor to set up a schedule that will work for them. The post-associate certificate is awarded upon successful completion of 16 credit hours (exact number may vary slightly due to credit value or content of course).

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

CIS 171	Introduction to Networking	3
CIS 235	Managing and Troubleshooting PCs	3

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

BUS 220	Supervision	3	CIS 251	IT Project Management	3
CIS 125	Principles of Information Security	3	CIS 271	Local Area Networks	3
CIS 172	Network Security Fundamentals	3	CIS 273	TCP/IP and Network Architectures	3
CIS 173	Wireless Local Area Networks	3	ELECT 144	Introduction to Microcontrollers	3
CIS 178	Technical Microsoft Windows	3	QM 107	Quality Planning and Team Building	3
CIS 250	Systems Development and Design	4			

Completion of a minimum of 16 credit hours is required. Courses can be taken through independent study.

Students may choose an applicable 200-level elective.