### BIOMEDICAL ENGINEERING TECHNOLOGY

**Credentials**

Biomedical Engineering Technologist AAS degree .......... 66–67 cr.
Biomedical Applications post-associate certificate ........... 16 cr.

**Major Description**

Does the idea of working on sophisticated diagnostic equipment and medical devices in a health care setting excite you? If so, the field of biomedical engineering technology could be for you.

Schoolcraft offers a biomedical engineering technologist associate in applied science degree that teaches students to maintain and repair medical electronic equipment in hospitals, labs and industries engaged in the manufacture and sale of these products. For those already working in the field, the biomedical applications post-associate certificate can help you advance in your career by providing you with the knowledge and skills needed to meet the demands of the rapidly changing biomedical field.

- Our state-of-the-art lab enables you to troubleshoot equipment and design prototypes.
- You can apply your skills in the program’s two-semester-long internship, which gives you hands-on, in-the-field training in one of the area’s most respected hospitals.
- Students must complete internships to be eligible to fulfill program requirements.

**Job Titles & Median Salaries or Hourly Rates**

- Biomedical Engineering Technician: $45,864 (Michigan)

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### Biomedical Applications Post-Associate Certificate

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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 171</td>
<td>Introduction to Networking</td>
<td>3</td>
</tr>
<tr>
<td>CIS 235</td>
<td>Managing and Troubleshooting PCs</td>
<td>3</td>
</tr>
</tbody>
</table>

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

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

Completion of a minimum of 16 credit hours is essential.

Courses can be taken through independent study.

Students may choose an applicable 200-level elective.
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 to complete an application.

### SAMPLE SCHEDULE OF COURSES

#### Admission Prerequisites

**First Year—Fall Semester**

- **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**

- **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**

**First Year—Spring/Summer Session**

- **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**

- **BMET 116** Biomedical Instrumentation Terminology and Safety 1 ........................................3
- **Mathematics** Select 1 ..........................................................4
- **MATH 111** Applications—Utility of Math
- **MATH 113** Intermediate Algebra for College Students
- **Social Science** Select 1 ..........................................................3
- **POLS 209** International Relations
- **PSYCH 153** Human Relations
- **SOC 210** Cultural Diversity
- **English** Select 1 .................................................................3
- **ENG 102** English Composition 2
- **ENG 116** Technical Writing

**Total Credits 13**

**Second Year—Winter Semester**

- **BMET 204** Biomedical Instrumentation Terminology and Safety 2 ........................................4
- **BMET 254** Biomedical Equipment Internship 1 ...........3
- **Elective** Select from the list below ..................................3–4
- **Elective** Select from the list below ..................................3–4
- **HUM 106** Introduction to Art and Music ....................1

**Total Credits 14–16**

**Second Year—Spring/Summer Session**

- **BMET 255** Biomedical Equipment Internship 2 ............3

**Total Credits 3**

**PROGRAM TOTAL 66–68 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
- **CIS 171** Introduction to Networking ..................................3
- **CIS 235** Managing and Troubleshooting PCs ..................3
- **COMPS 124** Introduction to Personal Computers and Software ..................................3
- **COMPS 126** Technical Programming ..............................3
- **ELECT 144** Introduction to Microcontrollers ..................3
- **ELECT 145** Fluid Power .........................................................4
- **ELECT 218** AC/DC Motors .....................................................3
- **ELECT 228** Electronic Troubleshooting .........................3
- **ELECT 251** Programmable Logic and Industrial Controls 4
- **MET 102** Introduction to Materials Science ..................3