

# Biomedical Equipment Technology

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## Biomedical Equipment Technology Suggested Course Sequence

The following is the suggested plan for when to take each course to complete the Associate in Applied Science degree, based on the program requirements of the 2023-2024 catalog. This is only a recommendation — you may take courses in another order upon consultation with your advisor. This plan is based on you starting with college-level math and English courses, starting your program in the fall, and attending full-time. You can also follow this sequence if you attend part-time. Speak with your academic advisor about the plan and any questions. This program might also offer diplomas or certificates; visit the catalog or contact the program for details. Visit the Academic Advising page for instructions on locating your assigned advisor: <https://www.cpsc.edu/academics/academic-advising>

Biomedical Equipment Technology suggested course sequence

**BMT 111. Introduction to Biomedical Field. 2.0 Credits.** Class-2.0. Clinical-0.0. Lab-0.0. Work-0.0

This course introduces the fundamental concepts of the health care delivery system. Topics include hospital organization and structure, BMET duties and responsibilities, and the professional and social interrelationships between services. Upon completion, students should be able to demonstrate an understanding of hospital organization as related to BMET duties.

**BMT 112. Hospital Safety Standards. 3.0 Credits.** Class-2.0. Clinical-0.0. Lab-2.0. Work-0.0

This course covers national, state, and local standards pertaining to hospital safety. Topics include electrical safety, gas safety, SMDA reporting, and JCAHO and FPA compliance. Upon completion, students should be able to conduct PM and safety inspections in compliance with safety regulations.

**BMT 120. Biomedical Anatomy & Physiology. 3.0 Credits.** Class-2.0. Clinical-0.0. Lab-2.0. Work-0.0

This course provides a basic study of human anatomy and physiology with emphasis on biomonitors of body systems. Topics include homeostasis; cells and tissues; and the structure, function, and monitoring of body systems. Upon completion, students should be able to demonstrate a basic understanding of the structure, function, and biomedical monitoring of human body systems.

**BMT 212. BMET Instrumentation I. 6.0 Credits.** Class-3.0. Clinical-0.0. Lab-6.0. Work-0.0

This course covers theory of operation, circuit analysis, troubleshooting techniques, and medical applications for a variety of instruments and devices. Topics include electrodes, transducers, instrumentation amplifiers, electrocardiographs, monitors, recorders, defibrillators, ESU units, and related equipment used in clinical laboratories, intensive care units, and research facilities. Upon completion, students should be able to calibrate, troubleshoot, repair, and certify that instrumentation meets manufacturer's original specifications.

Prerequisites: Take ELC 131

**BMT 213. BMET Instrumentation II. 3.0 Credits.** Class-2.0. Clinical-0.0. Lab-3.0. Work-0.0

This course provides continued study of theory of operation, circuit analysis, troubleshooting techniques, and medical applications for a variety of instruments and devices. Topics include instruments found in clinical laboratories, intensive care units, and research facilities. Upon completion, students should be able to repair, calibrate, and certify that instrumentation meets manufacturers' original specifications.

Prerequisites: Take BMT 212

**BMT 223. Imaging Techniques/Laser Fundamentals. 4.0 Credits.** Class-3.0. Clinical-0.0. Lab-2.0. Work-0.0

This course covers techniques associated with X-Ray, CT Scan, Magnetic Resonance Imaging and ultrasound, along with fundamental concepts and applications of medical lasers. Topics include radiation interaction with matter, X-Ray emissions, beam restricting devices, laser energy generation, and laser usage in surgery and other related medical procedures. Upon completion, students should be able to understand the operation of imaging devices, evaluate, calibrate, align, and provide safety instruction in usage of medical lasers.

**BMT 225. Biomedical Trouble Shooting. 3.0 Credits.** Class-1.0. Clinical-0.0. Lab-4.0. Work-0.0

This course is designed to provide students with basic problem solving skills, and to track down and identify problems frequently encountered with medical instrumentation. Emphasis is placed on developing logical troubleshooting techniques using technical manuals, flowcharts, and schematics, to diagnose equipment faults. Upon completion, students should be able to logically diagnose and isolate faults, and perform repairs to meet manufacturer specifications.

Prerequisites: Take BMT 212