

Biomedical Equipment Technology

A course of study prepares the students to use basic engineering principles and technical skills to install, operate, troubleshoot, and repair sophisticated devices and instrumentation used in the health care delivery system. Includes instruction in instrument calibration, design and installation testing, system safety and maintenance procedures, procurement and installation procedures, and report preparation. With an Associate in Applied Science (A.A.S.) degree and two years of experience, students should become a certified Biomedical Equipment Technician.

Information on the Biomedical Equipment Technology program is available on the Biomedical Equipment Technology website.

For specific information about potential positions and wages in biomedical equipment employment, visit the Central Piedmont Career Coach website.

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 biomonitoring 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