

Anoka Technical College

BMET 2012: Biomedical Instrumentation

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 2

OJT Hours/Week: *.*

Prerequisites:

This course requires the following prerequisite
ETEC 1202 - Solid State Electronic Devices

Corequisites: None

MnTC Goals: None

This course covers theory and operations of medical test equipment. The course will introduce test and measurement equipment used for preventive maintenance, diagnosis and repair of medical equipment. A variety of biomedical transducers will be introduced. IEC 62353 (International Electrotechnical Commission) standards for electrical safety testing of medical devices will be discussed throughout the course. (Prerequisites: ETEC 1202)(3 credits lecture/1 credit lab)

B. COURSE EFFECTIVE DATES: 08/25/2014 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

D. LEARNING OUTCOMES (General)

1. Explain IEC 62353 standard for electrical safety testing of medical devices.
2. Describe insulation resistance test, leakage testing, earth bond testing.
3. Distinguish between and apply the procedures required for insulation resistance test, leakage testing, and earth bond testing.
4. Identify the hazards of maintaining and repairing certain biomedical instrumentation such as defibrillators or electro surgical units.
5. Describe types of lasers used in the medical field.
6. Compare types of lasers used in the medical field.
7. Analyze the capabilities and limitations of transducer devices used in biomedical instrumentation.
8. describe defibrillators, electro surgical units, infusion pumps, blood pressure device, light sources, and other standard biomedical instruments.
9. Test a variety of biomedical instrument which may include a defibrillator, ECG, infusion pump, electro surgery unit, and other standard biomedical instruments.
10. Describe the different kinds of batteries used in medical equipment.
11. Appraise the use of different battery technologies for medical equipment.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted