

Minnesota State College Southeast

BMET 2221: Introduction to Biomedical Equipment

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 2

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This introductory course begins with a brief overview of the human body. There will be special focus on the heart and circulatory system. Biomedical instrumentation and measurement will include information on electrodes, sensors, transducers, bioelectric amplifiers, electrocardiographs and other cardiovascular devices. (3 credits: 2 lecture/1 lab)

B. COURSE EFFECTIVE DATES: 07/01/2010 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

D. LEARNING OUTCOMES (General)

1. Demonstrate proper use of common biomedical test equipment
2. Define electrode
3. Describe the function of the EKG machine
4. List basic care/maintenance of procedures of EKG machine
5. Describe transducer
6. Describe types of transducers used in biomedical instrumentation
7. List units of transducer sensitivity
8. Sketch electrical configuration of different transducers
9. List different types of electrodes and function
10. Describe impedance mismatches between electrodes
11. Describe function of biomedical amplifier
12. Describe different configurations of biomedical amplifier
13. State principles of operation of isolation amplifier
14. Describe operation of op amp
15. Define terms used with biomedical amplifiers
16. Describe calibration of biomedical equipment
17. List test equipment commonly used
18. Install fittings on cable ends
19. Identify major body systems
20. Describe function of body systems
21. Describe signals at equipment interface points
22. Describe function of medical oscilloscope

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted