

Minnesota State College Southeast

BMET 2222: Biomedical Equipment Safety

A. COURSE DESCRIPTION

Credits: 2

Lecture Hours/Week: 2

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course covers the quality assurance and continuous quality improvement aspects as related to a hospital setting. Electrical safety and preventive maintenance will be covered. Hospital safety codes will be discussed and information from NEC, NFDA and, JCAH will be presented. (Prerequisites: ELEC 1251 Solid State Devices) (2 credits: 2 lecture/0 lab)

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

C. OUTLINE OF MAJOR CONTENT AREAS

D. LEARNING OUTCOMES (General)

1. Define electrical safety
2. List the names of major organizations which publish electrical safety codes and standards
3. List responsibilities of hospital staff regarding safety
4. Relate how preventive maintenance reduces electrical hazards
5. Define corrective maintenance
6. Define preventive maintenance
7. Explain the insurance and legal requirements regarding electrical safety
8. Develop an electrical safety program for a typical hospital
9. Explain the physiological effects of poor safety measures on the human body
10. Define leakage current
11. Explain the usefulness of A.C. line isolation systems
12. List the dangers associated with poor grounding
13. Describe required grounding of electronics equipment
14. Explain how hazards through ground faults can be reduced
15. Administer electrical safety tests on equipment
16. Explain precautions required for H.I.V. or TB prevention for hospital workers
17. Describe HIPPA regulations
18. List extra precautions biomed personnel must take to maintain cleanliness standards in medical facilities
19. Describe micro shock (also called cardiac shock)
20. Describe macro shock
21. State the ground resistance limit for existing portable medical equipment in patient care areas
22. State the chassis leakage current limit for portable medical equipment in patient care areas
23. State the lead leakage current limit for portable medical equipment in patient care areas
24. Describe the current rules for radiation safety required in medical equipment maintenance and use
25. Describe the current rules for safety in the maintenance and use of medical laser equipment
26. Describe fire safety rules commonly required for medical equipment maintenance personnel
27. Describe chemical rules commonly required for medical equipment maintenance personnel
28. Explain NEC or other safety rules pertaining to building wiring and grounding
29. List the dangers associated with X-rays
30. Name the units used for measuring radioactivity (e.g.: curie, roentgen, dose rate)
31. Describe the protocols involved in working in the Operating Room (dress code, cleanliness and attitude)
32. List the safety precautions observed in the OR

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted