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