EET-2901: CLINICAL INTERNSHIP

Cuyahoga Community College

Viewing: EET-2901 : Clinical Internship

Board of Trustees:
2018-05-24

Academic Term:
Fall 2018

Subject Code
EET - Electrical/Electronic Engineer

Course Number:
2901

Title:
Clinical Internship

Catalog Description:
Internship where students are expected to perform 360 hours of service at a local hospital or other biomedical facility. Students are expected to perform activities related to their biomedical technology field, including but not limited to repair of biomedical equipment, safety inspections, and calibration.

Credit Hour(s):
3

Lecture Hour(s):
0

Lab Hour(s):
0

Other Hour(s):
360

Other Hour Details:
Practicum: 360 hours per semester/36 hours per week for 10 weeks

Requisites

Prerequisite and Corequisite
EET-2410 Biomedical Instrumentation II and EET-2220 Electronics II.

Outcomes

Course Outcome(s):
Repair selected biomedical equipment, such as electrosurgery units, electrocardiographs, defibrillators, bedside monitors, nurses' station monitors, and ventilators.

Essential Learning Outcome Mapping:
Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):
1. Properly use technical service manuals to diagnose and repair biomedical equipment.
2. Use proper hand tools to remove and insert various electronic/mechanical components in biomedical test equipment.
3. Communicate (orally and in writing) with various hospital personnel as to the repair status on various biomedical test equipment.
4. Use user manuals to understand the theory of operation for biomedical test equipment.

Course Outcome(s):
Perform preventive maintenance (P/M), calibration, and safety checks on selected general biomedical equipment.

Essential Learning Outcome Mapping:

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):

1. Perform safety checks on operating room equipment under the supervision of a qualified biomedical technician.
2. Maintain an engineering logbook, highlighting daily activities.
3. Perform a preventive maintenance procedure on hospital equipment and record any failures.
4. Complete 360 hours in a clinical engineering department with 2 supervisor evaluations.
5. Complete 3 reports on 3 different pieces of hospital equipment while either completing a preventive maintenance (P/M) or a repair on that equipment.

Methods of Evaluation:

1. Clinical engineering notebook
2. Three formal lab reports
3. Resume
4. Two formal evaluations by clinical site supervisor

Course Content Outline:

1. Medical terminology
   a. Medical equipment
   b. Nursing staff and physicians
2. Operating room
   a. Operating room attire
   b. Safety checks on operating room equipment
   c. Preventive maintenance on operating room equipment
3. Technical service manuals
   a. Diagnosing biomedical equipment
   b. Repairing biomedical equipment
   c. Identifying and purchasing replacement components
4. Hand tools
   a. Removing electronic components from electronic circuit boards
   b. Inserting electronic components into electronic circuit board
5. Selected general biomedical equipment
   a. Preventive maintenance
   b. Inspection
   c. Calibration
   d. Safety check
   e. Purchase of replacement parts
6. Repair of selected biomedical equipment
   a. Electrosurgery units
   b. Electrocardiographs
   c. Defibrillators
   d. Bedside monitors
   e. Nurses" station monitors
   f. Ventilators
   g. IV pumps
   h. Centrifuges
   i. Patient monitors
   j. Safety analyzers
   k. Med testers
   l. Simulators & testers
7. Written progress reports on various biomedical repair activities
   a. Generate repair requisition forms
   b. Generate purchase requests
   c. Maintain engineering logbook
8. Perform preventative maintenance

a. Perform a Preventive Maintenance (P/M) procedure on a piece of biomedical equipment per P/M procedure and record the results as Pass/Fail on acceptance criteria outlined in the P/M Procedure.
b. Record results of testing on a piece of biomedical equipment using instruments such as Safety Analyzer or Simulator.
c. Refer to biomedical equipment manual to determine Pass/Fail criteria for a particular test on that equipment.
d. Write 3 written reports on 3 different pieces of biomedical equipment illustrating how a problem was solved or following a P/M procedure.

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