Course Outline for Electronic Systems Technology 51

FABRICATION TECHNIQUES FOR ELECTRONIC SYSTEMS TECHNOLOGY

Catalog Description:

ESYS 51 - Fabrication Techniques for Electronic Systems Technology  2.00 units
Prototype development includes sheet metal, printed circuit board layout and fabrication, connection and soldering techniques, use of hand tools, and machines in electronic fabrication. Use of computer software tools as applied to electronic fabrication.
Requisites: none
Grading Option: Letter Grade

Discipline:

<table>
<thead>
<tr>
<th>Units</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Week</td>
</tr>
<tr>
<td>Lecture</td>
<td>1</td>
</tr>
<tr>
<td>Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>Clinical</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>2.00</td>
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Prerequisite Skills:
None

Measurable Objectives:

Upon completion of this course, the student should be able to:
1. create basic schematic, assembly, and fabrication drawings using industry-common drawing software;
2. identify common operating and safety practices used in industry;
3. demonstrate proper soldering technique for wiring and printed circuit assembly;
4. demonstrate proper use of hand and power tools on electronic systems;
5. assemble and test a prototype electronics project.

Course Content:

Course Content, Lecture
1. Shop safety
2. Sheet metal layout and fabrication
3. Printed circuit board fabrication
4. Printed circuit board soldering
5. Wiring, soldering, and crimping
6. Prototype assembly and testing

Course Content, Laboratory
1. Shop safety
2. Sheet metal layout and fabrication
3. Printed circuit board fabrication
4. Printed circuit board soldering
5. Wiring, soldering, and crimping
6. Prototype assembly and testing

Methods of Presentation
1. Lecture/Discussion
2. Laboratory
3. Demonstration/Exercise
4. Online learning objects

Assignments and Methods of Evaluating Student Progress

1. Typical Assignments
   A. Solder components to a printed circuit board and assemble the board and supporting components into the chassis.
   B. Test and document the performance of the finished prototype.

2. Methods of Evaluating Student Progress
   A. Exams/Tests
   B. Papers
   C. Class Participation
   D. Lab Activities
   E. Midterm Examination
   F. Final Examination

3. Student Learning Outcomes
   Upon completion of this course, the student should be able to:
   A. The student will use standard software applications to document the construction and assembly of an electronic system.
   B. The student will use standard tools to perform soldering, assembly, and fabrication tasks on electronic assemblies and
systems.

Textbook (Typical):

Special Student Materials
1. Safety glasses

Abbreviated Class Schedule Description:

Prototype development includes sheet metal, printed circuit board layout and fabrication, connection and soldering techniques, use of hand tools, and machines in electronic fabrication. Use of computer software tools as applied to electronic fabrication.

Requisites: none