
COURSE SYLLABUS

DIVISION: Workforce Services

REVISED: January 2015

CURRICULUM: Electrical Electronics Engineering Technology

COURSE NUMBER AND TITLE: ELE 158, Surface-Mount Soldering

CREDIT HOURS: 1

HOURS/WEEK LECTURE: 0

HOURS/WEEK LAB: 3

LECTURE/LAB COMBINATION: 3

I. CATALOG DESCRIPTION:

Emphasizes high reliability soldering concepts and soldering standards as applied to surface mount soldering and rework, covering identification, installation and removal of components, using various equipment including hot air and soldering iron. Provides an introduction to IPC-A-610 soldering standards.

II. RELATIONSHIP OF THE COURSE TO CURRICULUM OBJECTIVES:

There is no background in soldering required for this course.

III. REQUIRED BACKGROUND/PREREQUISITES/COREQUISITES:

Prerequisites: None

Co-requisites: E/E Calculations I or instructor approval

IV. COURSE CONTENT:

1. Safety/ESD/EOS
2. Maintenance and care of soldering equipment
3. The role of solder, flux and solvent
4. Handling of circuit boards
5. Soldering process and procedure
6. Soldering procedure for through hole and surface mount situations
7. Component identification and installation
8. Desoldering processes as related to board preparation and component removal
9. Types of printed circuit boards, level of repair conformance, scope, purpose, controls and classifications.
10. Surface mount installation, Identification and removal.

V. LEARNER OUTCOMES :**VII. EVALUATION:**

Demonstrate knowledge of the safety procedures and regulations that are related to the soldering industry.	Written quizzes and tests Oral and written reports Homework and projects
Demonstrated the knowledge and awareness of the damage that can be caused by static, how to control the static and damage to equipment and components.	
Demonstrate a knowledge of solder, what size is needed for the job, how it is supposed to look.	
Demonstrate the ability to solder through hole and surface mount components.	
Demonstrate the ability to repair, remove and modify circuit boards.	
Demonstrate the ability to identify SMT and through hole components and how they are installed on the circuit board.	
Identify the different circuit board types.	
Demonstrate the ability to inspect printed circuit boards for defects.	

VII. The course supports the following general education goals/objectives:DCC Educational Objectives

- Communication
- Critical Thinking
- Information Literacy
- Quantitative Reasoning