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Off Hrs" MTWTH 5:30-6 pm

**Electronics and Computer Hardware Technology 22**  
**Basic Electronic Fabrication**

**Course Offering: MW (F) 6-9:20 pm, (S) 1:30-4:20 pm**

**3 units; 2 hours lecture, 4 hours lab**  
**Credit, degree applicable**  
**Transfer CSU**

This course focuses on the materials and the processes used for fabricating electronic systems. The process includes designing, assembling, testing, and documenting a basic electronic fabrication project. Topics covered will include safety, component identification, schematic diagrams, assembly pictorials, soldering (both printed wire boards and terminals), inspection, sheet metal fabrication, hand-tool use, cabling, wire wrapping, printed circuit board construction and repair, Continuous Improvement Techniques, and ESD (Electrostatic Discharge) awareness. Mass production will be stressed for practical experience in all areas.

**Materials : Electronic Project Design and Fabrication / Edition 6, ISBN-13: 9780131130548**

Pub. Date: May 2004, Ronald Reis, Prentice Hall (Optional)

**ECHT 22 SLO #1** Upon successful completion of this course, students will be able to identify and safely operate/manipulate various types of electronic hand tools and test equipment

**ECHT 22 SLO #2** Upon successful completion of this course, students will be able to incorporate data and analysis reporting protocols, using either "paper" and "paperless" environments, similar to data reporting and analysis used by many Electronics Manufacturers and Service Organizations

**ECHT 22 SLO #3** Upon successful completion of this course, students will be able to produce a functional Low Voltage, (DC), direct Current Power Supply project sample, that meets predetermined specifications, which could be potentially "mass" produced

## **Board Policy 5500**

### **Academic Honesty & Standards of Conduct**

#### **ACADEMIC HONESTY**

El Camino College is dedicated to maintaining an optimal learning environment and insists upon academic honesty. To uphold the academic integrity of the institution, all members of the academic community, faculty, staff and students alike, must assume responsibility for providing an educational environment of the highest standards characterized by a spirit of academic honesty. It is the responsibility of all members of the academic community to behave in a manner which encourages learning and promotes honesty and to act with fairness toward others. Students should not seek an unfair advantage over other students when completing an assignment, taking an examination, or engaging in any other kind of academic activity

#### **DISCIPLINARY ACTION**

Disciplinary action appropriate to the misconduct as defined in BP 5500 may be taken by an instructor (see items C- 1 and 5 below), the Director of Student Development or his or her designee (see items C - 1, 2, 3, 4, 6, and 7 below), and the Board of Trustees (see item C8 below).

**A. Consequences for Academic Dishonesty** When an instructor has determined that there is evidence of dishonesty in any academic work, the student may receive a failing grade for that piece of work and disciplinary action may be pursued. Any or all of the following actions may be imposed:

1. The instructor may assign a failing grade (no credit) to an examination or assignment in which academic dishonesty occurred.
2. The instructor may remove the student from the class or activity for the day of the incident and one additional class day as stipulated in C.5 of this procedure.
3. The instructor may complete the appropriate reporting forms (Disciplinary Form C – Academic Dishonesty Report Form and/or Disciplinary Form B –Notice of Suspension from Class/Lab/Library) and submit them along with a copy of the evidence to the Director of Student Development or his or her designee. This information will be placed in the student file.
4. If there is evidence of serious or repeated violations of academic honesty, the college may pursue additional disciplinary action in accordance with the disciplinary measures outlined in this procedure

**Disability Statement** Students with disabilities are an integral part of the El Camino Community. Our goal is to provide accommodations necessary to assist students in achieving their educational goals

**Attendance Policy:** Students who miss (3) class meetings will be dropped no matter how well their doing in class

**ECHT 22, Basic Electronic Fabrication**

<b>Week</b>	<b>Lecture Topics and Assigned Labs</b>	<b>Assignment</b>
1-2	Orientation , Safety, Basic Schematic Symbols	
3-4	PCB Design, Reverse Engineering, and Basic Soldering Techniques	<b>Assign 1</b>
5-6	Circuit Board Fabrication Techniques, Etching, and Chemical use	<b>Assign 2</b>
7-8	Basic Mechanical Package Design,(Orthographic, Isometrics, and Pictorials)	<b>Assign 3</b>
9-10	Basic Sheet metal Fab (Chassis Construction and Modifications Protocols in Developing a “Planner’s Guide	
10-14	Student Build of Final Project	
15-16	Submission of Final Project and Documentation Package	<b>Evaluation of Deliverables</b>

<b>Evaluation Process:</b>	<b>Chassis Fab</b>	<b>20 pts</b>	<b>A= 270 - 243</b>
	<b>Wiring Techniques</b>	<b>20 pts</b>	
	<b>Soldering Techniques</b>	<b>20 pts</b>	<b>B= 242- 216</b>
	<b>Documentation</b>	<b>40 pts</b>	
	<b>Attendance</b>	<b>20 pts</b>	<b>C = 215- 189</b>
	<b>Accuracy of Documentation</b>	<b>10 pts</b>	
	<b>Practicum Final Exam</b>	<b>135 pts</b>	<b>D = 188- 162</b>
			<b>F= 161 -0</b>