

# ECE2891 Course Syllabus

## ECE2891

### Practical Skills and Design (0-3-1)

#### Prerequisites

ECE2040

#### Corequisites

None

#### Catalog Description

This course teaches practical skills, such as soldering and laying out printed circuit boards, for students to be able to design and build their own applications.

#### Textbook(s)

No Textbook Specified.

#### Topical Outline

##### Syllabus:

1. Basic Safety Lab (such as the EHS safety course)
2. Basic Tools (screwdrivers types, hammers, wrenches etc.)
3. Wiring Introduction (breadboards, connectors etc)
4. Soldering (How to solder through hole connections, etc.)
5. Advanced Soldering (PCB surface mount, etc.)
6. Power Tools (bandsaws, power drills, grinder belts, circular
7. Machines (3D printing, CNC milling, laser cutting, PCP mill
8. LabVIEW
9. Hardware Integration (sensor conditioning, working with ICs
10. Fundamentals of Design

The course will have 10 weeks of labs where students get practical

##### Grading:

Lab journal 25%

Design Project 75%

##### Learning outcomes:

At the end of the term, students will be able

- ??????????????? to solder wires and perform surface mount soldering
- ??????????????? to use power tools to build wood and metal mounts f
- ??????????????? to use machines such as 3D printers, CNC machines,
- ??????????????? to use LabVIEW for basic software integration with
- ??????????????? to understand the fundamentals of design and be abl