Course Description:
Design of hardware and software interfaces to microcomputer for instrumentation and control applications. Three lectures, one lab.

Prerequisites:
ECE 3710

Textbook:
No textbook required

Course Outcomes:
1. Understand basic analog and digital interfacing to micro-controllers.
2. Interface a sensor.
3. Interface an actuator.
4. Create a user interface.

Topics Covered:
- Project requirements
- Microprocessor selection
- Tool chain setup
- Basic software
- Digital outputs
- Digital inputs
- Timers and interrupts
- Displays
- DC and stepper motors
- Analog and pulse width modulation outputs
- Serial ports (RS232 and USB)
- SD memory cards

Outcome Assessments (Grades):
- Project 80%
  - C Working project/demo 60%
  - C Design review 20%
- Quizzes 20%

Class Schedule:
Class Three times a week for fifty minutes.

Contribution of course to meeting the requirements of Criterion 5:
4 credit hours of Engineering Topics and contains significant engineering design content
Relationship of course to student outcomes:

Instructor:
  Don Cripps, Principal Lecturer
  January 2014