ES432 – *Embedded Microcontroller Applications*

1. **Course Objectives:** Develop fundamental embedded computer skills including:
   a. An understanding of the internal organization and operation of the PIC18F microcontroller;
   b. Fundamentals of assembly language programming for the PIC18F;
   c. Use of the Microchip Integrated Development Environment (IDE) for assembly language and C programming, debugging and testing;
   d. Hardware / Software integration of PIC18F embedded microcontroller based systems.

2. **Course Description:** A deeper understanding of the microcomputer internal architecture and integration into embedded systems applications is provided using the popular PIC18F microcontroller. The microcontroller internal architecture and instruction set is used to strengthen the programmer’s model of a microcontroller. An introduction to assembly language programming is followed by embedded application development in C. Hardware and software integration labs culminate with a final project.


4. **Prereq:** ES430 or approval of department chair

5. **Credits:** 2-2-3