Minnesota State College Southeast

ELEC 2230: Microcontroller Applications

A. COURSE DESCRIPTION

   Credits: 5
   Lecture Hours/Week: 3
   Lab Hours/Week: 4
   OJT Hours/Week: *.*
   Prerequisites: None
   Corequisites: None
   MnTC Goals: None

   This course will introduce the student to embedded controllers. The student will configure microcontrollers to read switches and drive output devices. Students will explore the features and benefits of single chip systems. (Prerequisites: ELEC2211 Digital Electronics I I) (5 credits: 3 lecture/2 lab)

B. COURSE EFFECTIVE DATES: 07/01/2010 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

D. LEARNING OUTCOMES (General)

   1. Define microcontroller terms
   2. Describe microcontroller ports
   3. Configure program
   4. Use an instruction set
   5. Configure control program
   6. Analyze memory map
   7. Describe loops
   8. Describe stack operation
   9. Configure stepper drive
  10. Explain clocking modes
  11. Troubleshoot programming problems
  12. Identify sleep modes
  13. Use JTAG interface
  14. Analyze block diagrams
  15. Program ADC operation
  16. Program DAC operation
  17. Describe data acquisition system
  18. Control servo motor
  19. Display position control

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

   None

F. LEARNER OUTCOMES ASSESSMENT

   As noted on course syllabus
G. SPECIAL INFORMATION

None noted