Course Prefix and Number: ETR 273  
Credits: 3

Course Title: Computer Electronics I

Course Description (including lecture hours, lab hours, total contacts)
Teaches principles of digital electronics and microprocessors to familiarize the student with typical circuits and methods used to interface computer and/or controllers with various I/O devices. Includes exposure to high level programming as well as assembly language routines. Part I of II. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

General Course Purpose
This is a required course in the Electronics Technology Career Studies Certificate program.

Course Prerequisites/Corequisites (Entry-level competencies required for enrollment)
Prerequisite: ETR 203 or equivalent.

Course Objectives
Upon successful completion of the course, the student will be able to
- describe basic digital systems.
- apply number systems and codes.
- describe switching circuits.
- utilize Boolean algebra and logic circuits.
- describe the components of the various types of flip-flop counters and registers, their operation and applications.
- describe the use of integrated circuits and operating characteristics of the most commonly used logic families.
- present a representative cross-section of the common types of MSI devices, their basic operating principles and uses.

Major Topics to be Included

LECTURE
- introductory concepts of digital systems
- number systems and codes
- logic gates and Boolean Algebra
- combinational logic circuits
- flip-flops and related devices
- digital arithmetic: operations and circuits
- counters and registers
- IC logic families
- MSI logic families

LABORATORY
- switches, inverters and gates
- logic circuits
- flip-flops
- counters and registers
- clocks and one-shots

Effective Date of Course Content Summary: May 2009