METROPOLITAN STATE COLLEGE *of* DENVER
Office of Academic Affairs

REGULAR COURSE SYLLABUS

School of: Professional Studies

Department: Engineering Technology

Prefix & Course Number: EET 4340 **Crosslisted With*:** ____

Course Title: Interface Techniques

Check All That Apply: Required for Major: X Required for Minor: ____ Specified Elective:

Required for Concentration: __ Elective: __ Service Course: ____

Credit Hours: 3 (2+2)

Total Contact Hours per semester (assuming 15-16 week semester):

Lecture 30 Lab 30 Internship ____ Practicum ____ Other (please specify type and hours): ____

Schedule Type(s): B **Grading Mode(s):** L

Variable Topics Courses (list restrictions, including the maximum number of hours that can be earned**):

____

**** NOTE: This information must be included in the course description.**

Restrictions (Variable Topics Course): ____

Prerequisite(s): EET 3330 and EET 4370, with grades of "C" or better.

Corequisite(s): ____

Prerequisite(s) or Corequisite(s): ____

Banner Enforced:

Prerequisite(s): EET 3330 and EET 4370, with grades of "C" or better.
Corequisite(s): ____
Prerequisite(s) or Corequisite(s): ____

Catalog Course Description:
This course covers interfacing techniques between computers, peripherals, and other digital circuits.

APPROVED: Richard Ross 3/10/2011
Department Chair **OR** Program Director Date

B. J. Morgenegg 3-11-11
Dean **OR** Associate Dean Date

Sheila A. Thompson 6/2/11
Associate VP, Academic Affairs Date

*If crosslisted, attach completed Course Crosslisting Agreement Form

Prefix and Course Number: EET 4340

Required Reading and Other Materials will be equivalent to:
Han-Way Huang (2004). *PIC Microcontroller: An Introduction to Software & Hardware Interfacing,* or latest edition. Delmar Cengage Learning

Specific, *Measurable* Student Behavioral Learning Objectives:
Upon completion of this course the student should be able to:
1. Program and debug microprocessor devices.
2. Design microprocessor based circuits for common applications.
3. Create PC hardware interfaces, using Input/Output cards.
4. Create PC interface programs that support communications using serial, USB, and parallel ports.

Detailed Outline of Course Content (Major Topics and Subtopics) **or Outline of Field Experience/Internship (experience, responsibilities and supervision):**

I. Busses:
   A. Standard Busses
   B. Bus Interfaces
   C. Unidirectional vs. Bi-directional Busses

II. Peripheral Interfaces:
   A. Common Types
   B. Common Devices:
      1. UART
      2. USART
      3. PIA
      4. ACIA
      5. Other

III. Memory Interfaces:
   A. DMA
   B. Other

IV. Analog & Digital Interfaces:
   A. Analog to Digital Conversion
   B. Digital to Analog Conversion

V. Keyboard Interfaces

VI. Optical Couplers

VII. Standard Serial Ports

VIII. Standard Parallel Ports

IX. Interfacing Different Logic:
   A. Different Logic Families
   B. Different Logic Levels

Evaluation of Student Performance:
1. Written exams
2. Written lab reports