METROPOLITAN STATE COLLEGE *of* DENVER
Office of Academic Affairs

REGULAR COURSE SYLLABUS

School of: **Professional Studies**

Department: **Engineering Technology**

CIP Code: 15.0303

Prefix & Course Number: **EET 2000** **Crosslisted With*:** _____

Course Title: Electric Circuits and Machines

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

Required for Concentration: _____ Elective: _____ Service Course: X

Required for Certificate: X

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): MTH 1120 or MTH 1400, PHY 2020 or PHY 2331, with grades of "C" or better.

Corequisite(s): _____

Prerequisite(s) or Corequisite(s): _____

Banner Enforced:

Prerequisite(s): MTH 1120 or MTH 1400, PHY 2020 or PHY 2331, with grades of "C" or better.
Corequisite(s): _____
Prerequisite(s) or Corequisite(s): _____

Catalog Course Description:
This course introduces electric circuits for non-EET majors. It covers DC and AC circuits, generators, motors, transformers, elementary electronic devices, and circuits.

APPROVED:

Department Chair **OR** Program Director	12 Feb 08 Date
Dean **OR** Associate Dean	2/13/08 Date
Associate VP, Academic Affairs	3/7/08 Date

*If crosslisted, attach completed Course Crosslisting Agreement Form

EET 2000:

Required Reading and Other Materials will be equivalent to:

Kaiser (July 1997). *Electrical Power, 3rd Rev Edition.* Goodheart-Willcox Co

Specific, *Measurable* Student Behavioral Learning Objectives:
Upon completion of this course the student should be able to:

1. Utilize Ohm's law, Kirchoff's Voltage and Current Laws, Thevenin and Norton conversions to analyze AC and DC circuits and determine the theoretical value for current, voltage, power and resistance in AC and DC series.
2. Understand basic AC and DC motor design.
3. Write laboratory finding in a concise document comparing theoretical and actual data with computer generated models.

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

I. Introduction (review from physics)
   - A. Basic Circuit Components
   - B. Electrical Units
   - C. Scientific Notation
   - D. Metric Prefixes
   - E. Basic Electrical Quantities
     1. Atoms
     2. Electrical Charge
     3. Voltage
     4. Current
     5. Resistance
     6. Electric Circuit
   - F. Basic Circuit Elements
     1. Sources
     2. Resistors
     3. Capacitors
     4. Inductors
   - G. Ohms Law
   - H. Power

II. Series Circuits
   - A. Resistors in Series
   - B. Voltage Sources in Series
   - C. Kirchoff's Voltage Law
   - D. Voltage Divider
   - E. Power
   - F. Ground
   - G. Series Circuit Laboratory

III. Parallel Circuits
   - A. Resistor in Parallel
   - B. Kirchoff's Current Law
   - C. Power
   - D. Parallel Circuit Laboratory

IV. Series-Parallel Circuits and Laboratory

V. Thevenin's Theorem and Laboratory

VI. Magnetism and Electromagnetism

VII. A.C. Waveforms and Phasors and Laboratory

VIII. Capacitors and Laboratory

IX. Inductors and Demonstration Laboratory

X. Transformers and Demonstration Laboratory

XI. Frequency Response and Demonstration Laboratory

XII. Pulse Response and Demonstration Laboratory

XIII. Motors and Laboratory

Evaluation of Student Performance:
1. Written exams
2. Homework
3. Laboratory reports.
4. Laboratory exam.