

Course Information

Spring 2009

EGR 262

Fundamental Circuits Lab

Pre-requisites: EGR 260, EGR 125

Co-requisite: none

Credits: 2

Lecture Hours: 1

Lab Hours: 2

Total Hours: 3

Instructor: Paul Gordy

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Office: H-115 (Advanced Technology Center)

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Office Hours: as posted (will also be announced in class)

Fax (24 hour): 822-7334

Paul Gordy's Home Page - <http://www.tcc.edu/faculty/webpages/PGordy/>

Course Material:

1. Lab Notebook – Each student should buy a lab notebook from the bookstore. The notebook should contain 100 carbonless duplicate sets. All lab work will be recorded in this notebook.
2. Lab Manual – A lab manual will be provided to each student containing lab guides for each experiment and supplementary material.
2. Lecture Notes – The instructor will provide PowerPoint presentations for each lab as well as other useful materials for the course.
3. The textbook used in EGR 260-261 will serve as a reference: J. W. Nilsson, *Electric Circuits, 8th Edition*, Pearson Prentice Hall, 2008 (ISBN: 9780135142929)

Course Description:

Topics covered in EGR 262 include microprocessor hardware and programming, lab test equipment, lab safety, technical report writing, and using a microprocessor, such as the MicroStamp 11, to control basic electric circuits. Experiments include topics such as resistive circuits, analog-to-digital and digital-to-analog conversion, pulse width modulation, and the design of power supplies.

Course Objectives:

The general objectives of EGR 262 are to be able to:

- Gain familiarity with the architecture of the microprocessor used in lab
- Program microprocessors to control basic electric circuits
- Collect and analyze experimental data and produce lab reports according to specified standards
- Use proper safety precautions in working with lab equipment
- Gain experience in the use of microprocessors and various types of lab equipment
- Investigate a variety of circuits and concepts, including basic resistive circuits, analog-to-digital and digital-to-analog conversion, pulse width modulation, and the design of power supplies

Course Adaptation

The lab manual used for this course is a revised version based on original material developed by Prof. Mike Lemmon, Dept. of Electrical Engineering, Univ. of Notre Dame for their EE 224 course. Old Dominion University adapted the course from Notre Dame in creating their ECE 287 – Fundamental Circuits Lab course. Old Dominion then provided materials to Tidewater Community College so that this course could be developed.

Laboratory Experiments:

- Lab 1 Breadboarding Circuits
- Lab 2 MicroStamp11 Familiarization
- Lab 3 Lights and Switches - Hardware
- Lab 4 Lights and Switches – Real time
- Lab 5 Digital-to-Analog Conversion
- Lab 6 Analog-to-Digital conversion – Part 1: Hardware
- Lab 7 Analog-to-Digital conversion – Part 2: Software
- Lab 8 Pulse Width Modulation
- Lab 9 Digital-to-Analog Conversion Revisited
- Lab 10 Getting Power off the Wall
- Lab 11 Serial Interfaces
- Lab 12 Analog-to-Digital Conversion Revisited – Time Multiplexing

Grading:

Course grades will be based on lab report grades.

Grading Scale:

Grades will be based on the following scale:

A (90% – 100%), B (80% – 89%), C (70% – 79%), D (60% – 69%), F (0% – 59%)

Lab Report Guidelines

See additional handout

Absence:

A missed lab will result in a grade of 0 unless the student notifies the instructor prior to class or within 24 hours of the class with an adequate reason. Notification may be made by phone or by email.

General Information

TCC College and Student Handbook

Students are responsible for being aware of the policies, procedures, and student responsibilities contained within the current edition of the Tidewater Community College Catalog and Student Handbook. Students should familiarize themselves with the College's policies regarding misconduct and inclement weather policies found in the Student Handbook.

Last Day to Withdraw Without Academic Penalty

You may withdraw from a course without academic penalty during the first 60% of a session and receive a grade of "W"(withdrawal). The last day to withdraw without academic penalty is **March 20, 2009**. After that date, the student will receive a failing grade of "F" or "U". Exceptions to this policy may be made ONLY when initiated by the instructor and approved by the division dean; ONLY if you are able to document mitigating circumstances; and ONLY if you were making satisfactory progress in the course. **Students are advised to discuss attendance irregularities with the instructor. Do not simply stop attending. Failure to properly complete the withdrawal procedure may result in the assignment of "F" or "U" grades to your permanent record.**

Disability Services Statement

Disabilities Services of Tidewater Community College provides students, faculty, and staff programmatic and physical access in a supportive atmosphere and in accordance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act of 1990. In appreciation of the unique talents and needs of students with disabilities and chronic health issues, Disabilities Services further provides an array of services designed to enhance all educational experiences. *Students with disabilities or chronic health problems are encouraged to identify themselves to a Disability Services [DS] Counselor as early as possible. DS Counselors are on all campuses. Students with documented disabilities may qualify for academic accommodations such as more time on tests, sign language interpreting or Braille.*

Emergency Procedures

In the event of a bomb threat, tornado, or fire, students and staff may be asked to evacuate the building or move to a secure location within the building. Evacuation routes for movement to an external location or to a shelter within the building are posted at the front of the room. Students should review the maps and make sure that the exit route and assembly location for the building are clearly understood. If you have a disability that may require assistance during an evacuation, please let your faculty know at the end of the first class.

Cheating

College rules state that a student may be subjected to disciplinary action for academic cheating, plagiarism, or assisting in cheating or plagiarism. Disciplinary penalties include college dismissal or suspension. In addition, cheating, plagiarism, or assisting such activity is a most serious form of academic misconduct, and will in the sole discretion of the faculty member result in a grade of F on the work or for the course. A single act of cheating may subject a student to both a failing grade in the course, and student disciplinary action perhaps involving suspension or dismissal from TCC.