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### ETEC 242.01: Electronics Laboratory II

Steven L. Stiff

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Missoula College UM  
Department of Applied Computing and Electronics

**Course Number and Title** ..... ETEC 242 Electronics Lab II

**Term** ..... Spring 2015

**Semester Credits** ..... 3

**Pre/Corequisites** ..... ETEC 241 Instrumentation, or consent of instructor

### Faculty Contact Information

#### **Faculty**

Steven (Steve) L. Stiff

Phone: 243-7913

Email: [steven.stiff@umontana.edu](mailto:steven.stiff@umontana.edu)

#### **Office**

GH08-I

MC East Campus

#### **Office Hours**

MWF: 11:10am – 12:00pm

or by appointment

### Class Meeting Times and Final

#### **Section**

01 (CRN 34996)

#### **Day, Time, and Location**

TR 12:10pm – 3:00pm, HB05

#### **Final Exam**

None

### Course Description

Bread-boarding, building, repairing and troubleshooting electronic circuits using the equipment normally found in an electronic shop. Correlating measurement information in solving electronic problems.

#### **Correlation with Course EET 241T Instrumentation**

ETEC 242 is comprised of lab activities to reinforce the theory covered in course EET 241T Instrumentation. The labs must adhere to that course's study schedule of the course text (see Required Materials).

Attendance and participation in that course is required for competency in ETEC 242, and is paramount to understanding the processes and outcomes of the lab activities.

### Course Objectives

Upon completion of this course students will have a practical understanding and application of:

- The factors involved in taking measurements and dealing with errors.
- The different notations used in system calculations.
- The principles of AC and DC meter deflection and the proper use of analog meters.
- Comparison measurements using the wheatstone bridge and potentiometer circuits.
- The principles of circuit analysis, including circuit identification, implementation, and output interpretation; human and equipment safety by implementing proper procedures and precautions;
- Test equipment, including electronic multimeters, oscilloscopes, signal generators, spectrum analyzers and mechanical graphics chart recorders.
- Special purpose laboratory amplifiers, such as the chopper amplifier, the carrier amplifier, and the lock-in amplifier.
- Measurement, testing, and performance parameters of RF transmitter and receiver circuits.

**Required Materials**

- **Industrial Automated Systems: Instrumentation and Motion Control**, Terry L. M. Bartelt  
Cengage Learning, 2011  
ISBN 9781435488885  
Includes CD with Lab Manual
- EET 241 Toolkit

Additional Reference Materials (not required)

- **Elements of Electronic Instrumentation and Measurement, 3<sup>rd</sup> Edition**, Joseph Carr  
Prentice Hall, 1996  
ISBN 9780133416862

**Evaluation and Grading Criteria**

<b>Assessment</b>		<b>Grading Scale</b>	
Experiments .....	40.0%	100% - 90% .....	A
Course Projects .....	40.0%	90% - 80% .....	B
Attendance .....	20.0%	80% - 70% .....	C
		70% - 60% .....	D

**Course Policies**

**Online Component**

Various components of the course will be delivered via UOnline (<http://umonline.umn.edu>) using the Moodle Course Management Software. It is the responsibility of the student to become familiar with and work in Moodle. Moodle training is also available through UOnline.

**Attendance**

- Regular classroom attendance is expected and attendance is taken.
- Students more than 10 minutes late for class will lose credit for one hour of attendance.
- The semester grade for student attendance is based on total contact hours; students must be in attendance for 100% of contact hours to receive the 100% of the semester attendance grade.
- Reasonable breaks are expected; unreasonable breaks as determined by the instructor will result in the loss of credit for one or more hours of attendance.

**Assignments and Exams**

- All assigned work is due at the assigned time on the assigned date.
- There are no exams for this course.
- **All late or missed work receives a score of 0.** Late work is accepted only in extraordinary circumstances, and is accepted and graded at the instructor’s discretion.
- Accepted late work receives an automatic 20% deduction in grade.

**Electronic Communication Devices**

- All electronic communication devices must be secured, muted, or tuned off prior to the start of class.
- Any use of an electronic communication device during an exam is considered cheating and will be handled at the instructor’s discretion (refer to *Student Conduct*).
- Audio and/or video recording of class sessions is not permitted without prior approval of the instructor (refer to *Students with Disabilities*).

**Email**

This course uses your student email account for all course email communication. Therefore, you are required to monitor and use your student email account for course email communication.

**Student Conduct**

- *All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or disciplinary sanction by the University.*
- *Student conduct is governed by the Student Conduct Code. All students need to be familiar with the Student Conduct Code. It is available for review or can be downloaded at [http://www.umt.edu/vpsa/policies/student\\_conduct.php](http://www.umt.edu/vpsa/policies/student_conduct.php).*

**Students with Disabilities**

- Eligible students with disabilities will receive appropriate accommodations in this course when requested in a timely manner. Please be prepared to provide me a copy of your *Letter of Verification* supplied by your *Disability Services for Students (DSS)* Coordinator for my records. Refer to <http://life.umt.edu/dss> or call **406-243-2243** (voice/text) for information regarding your rights.
- When requesting accommodations, please contact me after class or in my office to discuss your needs. This is done in order to maintain your privacy and minimize class disruptions.
- For students requesting examination accommodations, you must supply me the completed Learning Center (LC) scheduling form for my signature at least 3 days prior to the scheduled test date (the LC requires the signed form at least two days prior to testing). LC contact information is available at [http://mc.umt.edu/student\\_resources/learning\\_center/](http://mc.umt.edu/student_resources/learning_center/)

**Policies for Dropping and Adding Courses, Changing Sections, Grading, and Credit Status**

- The University Policy for dropping courses or requesting grading/credit status changes can be found in the academic catalog or on the web at <http://www.umt.edu/registrar/students/dropadd.php>. All students should be familiar with this policy.
- If you are having difficulty with the course for any reason and decide not to continue, please complete a drop or withdrawal form. A properly completed and approved drop or withdrawal form will prevent you from receiving a failing grade on your college transcript.
- Please note: if you are receiving financial aid, dropping or withdrawing from a course may affect your financial aid status.

**Changes to Syllabus**

The instructor reserves the right to modify the syllabus and assignments as needed based on faculty, student, and/or other circumstances. If changes are made to the syllabus, amended copies will be dated and made available to the class.

**Semester Dates**

Thursday-Friday, January 22-23 ..... New Student Orientation  
 Monday, January 26 ..... Spring Semester Classes Begin  
 Monday, February 16 ..... Presidents Day – No Classes, Offices Closed  
 Monday-Friday, March 30-April 3 ..... Spring Break  
 Friday, May 8 ..... Last Day of Regular Classes  
 Monday-Friday, May 11-15 ..... Final Exams  
 Saturday, May 16 ..... Commencement