

Fall 2015

ENEE 3518

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University of New Orleans

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ENEE 3518
Electrical Engineering Laboratory
Assistant Dean Kim Jovanovich, Dept of Electrical Engineering

CATALOG DESCRIPTION

ENEE 3518 Electrical Engineering Laboratory

1 unit laboratory

A laboratory in basic electronics, instrumentation, and electric power devices for students not majoring in electrical engineering. The course carries no degree credit in the electrical engineering curriculum.

PREREQUISITES

Credit or concurrent registration in ENEE 3501

REFERENCE TEXTBOOKS AND OTHER MATERIAL

Reference book is Allan R. Hambley, Electrical Engineering Principles and Applications, 5th Edition, Pearson Prentice-Hall Company, 2011. ISBN #0-13-213006-8 used for both ENEE2500 and ENEE3501.

STUDENT LEARNING OBJECTIVES

After successfully completing this course each student will be able to:

- Describe how to apply state-of-the-art measurement equipment (voltmeters, ammeters, oscilloscopes, analyzers, etc.) to the characterization of electrical circuits.
- Formulate experimental methods and engineering approaches to the investigation of circuit operation.
- Assemble electrical hardware from a schematic into a physical form that can be tested and characterized.
- Compose written laboratory reports that convey the information collected and determined in the laboratory experiments.
- Compare theoretical performance expected from a circuit schematic with the actual operation of the circuit in a laboratory setting.
- Formulate conclusions about why variations may exist between theoretical outcomes and actual measurements
- Verify information obtained in ENEE2500 and ENEE3501 and see its relevance to engineering.
- Participate with other engineering students/lab partners in problem solutions in an academic lab setting.

COURSE TOPICS

- Exp. 1. Introduction to EE, resistive circuits: Ohm's Law, Kirchhoff's laws,
- Exp. 2. Equivalent circuits
- Exp. 3. Nodal, loop, superposition, Thevenin and Norton Theorems.
- Exp. 4. Verification of Maximum Power Transfer
- Exp. 5. Using the Oscilloscope
- Exp. 6. Frequency response of passive circuits 1
- Exp. 7. Frequency response of passive circuits 2
- Exp. 8. Design of a bandpass filter and measurements
- Exp. 9. Voltage current characteristics of various electronic devices

- Exp. 10. The operational amplifier
- Exp. 11. Rectifiers and power circuits
- Exp. 12. Digital logic circuits and gates

CLASS SCHEDULE

Class Meetings: EN716 10:00AM - 12:45PM Wednesday

INSTRUCTOR CONTACT INFO & OFFICE HOURS

Professor: Kim Jovanovich

Office: Room 841

Email: kjovanov@uno.edu,

Office Phone: 280-1366

Office Hours: Tuesday and Thursday 8:00 – 3:00PM

Other times by appointment

CRITERIA FOR GRADING, GRADING STANDARDS

Written lab report associated with each lab and a final exam will be given. Your final grade will be computed based on the following percentages:

Lab reports 75%

FINAL EXAM 25%

Your final semester grade will be curved based on the class average for the semester.

TENTATIVE DUE DATES FOR LAB REPORTS, EXAMS

Written lab reports from the previous week's experiment are due at the beginning of the next laboratory period. Late reports will be accepted but with a grading penalty. A late report will ONLY be accepted ONE CLASS after its due date and that report will be worth only 50% of its graded value as a late penalty.

A lab report is an account of an experiment and what was discovered during the experiment. Typically, lab reports present data, discuss results, and provide conclusions. Some lab reports also describe the experiment and the procedures followed. As a student, lab experiments provide you with hands-on experience. Writing about your work in a lab then forces you to think logically about your data. For example, if you get unexpected results from a lab experiment, you'll speculate why you got those results in the report.

I expect the reports to be neatly done, in an organized fashion, well written (check grammar and spelling) with answers clearly marked. It can be hand written or typed and it is to be organized into the following sections:

TITLE PAGE – experiment name, date, and lab partners participating

STATEMENT OF THE PROBLEM – what is the experiment trying to accomplish

METHOD OF TESTING – how was it conducted and the experimental method

MATERIAL/INSTRUMENTS NEEDED – list what equipment/parts was used

EXPECTED RESULTS – what theory predicts about the results

MEASURED DATA - this **must** be the actual sheet signed by me or TA before dismissal

RESULTS and CONCLUSIONS – explain your data and any differences between the theoretical expectations and your measurement results

REFERENCES – any books, web articles, etc. used by their title, location, and page number

You must turn in an individual lab report.

Test dates will be assigned well in advance of their administration date. Final Exam is scheduled for the last lab period on Wednesday December 2, 2015.

ATTENDANCE POLICY

Attendance is REQUIRED in ENEE3518 and roll will be periodically taken. You will be assigned a lab partner(s) and you are expected to work together as a team. You should share the responsibilities of performing the experiment. My class will be taught in a highly interactive manner so please be in class on time. Distracting interruptions are inconsiderate, disrespectful, and time-wasting. There is no excuse for repeatedly arriving late. Parking is often a hassle here so allow enough time for it.

OTHER PERTINENT INFORMATION

Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the Student Code of Conduct for further information. The Code is available online at <http://www.studentaffairs.uno.edu>.

During class times and exams, there will be no listening to music with Ipods/Ipads, cell phone usage or text messaging allowed. Turn off cell phones before class begins and you must put them away out of sight! This is a long class and you may leave the classroom for breaks as desired.

Cell phone calculators CANNOT be used for tests/exam.

Students are expected to treat faculty, TA, and fellow students with respect. Any actions that purposefully and maliciously distract the class from the work at hand will not be allowed. Civility in the laboratory and respect for the opinions of others is very important in an academic environment.

Safety is important....follow instructions on the use of the laboratory equipment!

It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. Students with disabilities should contact the Office of Disability Services as well as their instructors to discuss their individual needs for accommodations. For more information, please go to <http://www.ods.uno.edu>.