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Fall 2015

ENEE 2500

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University of New Orleans

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ENEE 2500 – BASIC ELECTRICAL CIRCUITS
3 credits, Tuesday and Thursday, 12:30 ~ 1:45pm, BEC-106

Fall 2015

Goals: This course is intended to give sophomores in engineering disciplines other than electrical an introduction to the analysis of the linear circuits. It is part of the engineering core curriculum.

Textbook: J. David Irwin and R. Mark Nelms, *Basic Engineering Circuit Analysis*, 10th Edition, Wiley, 2011.

Instructor: Dr. Huimin Chen, Associate Professor

Office: EN-819

Phone: 280-1280

Office Hours: 10:00am-12:00pm, Tuesday and Thursday or by appointment

Prerequisites:

- (1) Calculus
- (2) Basic college physics (electricity and magnetism)
- (3) Complex numbers

Topics:

- (1) Introduction to EE Subdisciplines
- (2) Resistive circuits: Ohm's Law, KCL, KVL, series and parallel resistance, voltage and current division, nodal and mesh analysis, independent and dependent sources, Thevenin's theorem and Norton's theorem
- (3) Circuits containing capacitors and inductors
- (4) Transient analysis: first and second order circuits
- (5) AC steady state analysis, phasors and phasor methods
- (6) Applications

Computer Usages: We will use Matlab as a computational tool for some illustrations.

Laboratory Projects: Not given as part of this course; however, ENEE3518 contains experiments which relate to this course.

Supplementary Materials: Will be given in-class.

Requirements: Attendance policy will be enforced by sign-up sheet and in-class exercises. Students are encouraged to discuss with each other, regularly check the Moodle course page for announcement, lecture notes, assignment solutions, etc. and read the hand-out materials. Homework assignments and exams should be worked out independently. Straight copy from others is strictly prohibited.

Grading Policy:

(1) Class participation	(5%)
(2) Homework assignment	(25%)
(3) Two in-class exams	(30%)
(4) Final	(40%)

Two in-class exams are closed book, one cheat-sheet allowed.

Final exam is open book & open notes.

Tentative Schedule for Exams: Exam #1: Tuesday, 12:30~1:45pm, 09/22/2015.
Exam #2: Tuesday, 12:30~1:45pm, 10/27/2015.
Final: Thursday, 12:30~2:30pm, 12/10/2015.

See <http://www.uno.edu/registrar/bulletin/finals.aspx> for final exam schedule.

Course Outline and Tentative Schedule:

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|-----|--|-----------------------|
| 1. | Course Introduction | (08/20) |
| 2. | Ohm's Law, KCL, KVL | (08/25, 08/27, 09/01) |
| 3. | Nodal and loop(mesh) analysis | (09/03, 09/08) |
| 4. | Analysis of dependent sources | (09/10, 09/15, 09/17) |
| 5. | Exam #1 | (09/22) |
| 6. | Circuits containing capacitors and inductors | (09/24, 09/29) |
| 7. | First order transient circuit | (10/01, 10/06, 10/08) |
| 8. | Second order transient circuit | (10/13, 10/20, 10/22) |
| 9. | Exam #2 | (10/27) |
| 10. | AC circuit | (10/29, 11/03) |
| 11. | AC steady state analysis, phasors and phasor methods | (11/05, 11/10, 11/12) |
| 12. | Operational amplifier circuit | (11/17, 11/19) |
| 13. | Source transformation and superposition | (11/24) |
| 14. | Thevenin's equivalent circuit | (12/01) |
| 15. | Course review | (12/03) |

Academic Integrity: 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. Please refer to the UNO Student Policies for further information (<http://www.uno.edu/studentaffairs/student-policies/>).

The Academic Dishonesty Policy is available online at

<http://www.uno.edu/studentaffairs/sa-documents/academicdishonestypolicy.pdf>

Accommodations for Students with Disabilities:

Students who qualify for services will receive the academic modifications for which they are legally entitled. It is the responsibility of the student to register with the Office of Disability Services (MH159) each semester and follow their procedures for obtaining assistance. For more information, visit <http://www.ods.uno.edu/>.