University of Portland (UP)
School of Engineering

EE 261 – Electrical Circuits – 3 cr. hrs.
Spring 2015
Tentative Course Outline Sheet

Course purpose: The purpose of this course is to introduce students to the basic elements of an electrical circuit and teach the fundamental laws and principles that they need to understand, analyze, and design electrical circuits.

Learning objectives: At the successful completion of this course, the student is expected to gain the following skills:

- Become familiar with basic elements of circuits (such as resistors, capacitors, inductors, voltage and current sources, etc.) and their mathematical models;
- Learn and apply the basic laws (such as Ohm's law, Kirchhoff's laws, node voltage method, superposition, the concept of source transformation, Thévenin and Norton equivalent circuits, maximum power transfer theorem, etc.);
- Analyze an electric circuit and be able to calculate voltage values, current values, power dissipation, etc.;
- Analyze and design basic op-amp circuits;
- Find the response of 1st and 2nd –order switching circuits;
- Find the unit-step response of 1st and 2nd –order circuits; and
- Find the steady-state response of ac circuits.

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Office hours: M 11:30-13:30; T 12:30-13:30; W 14:30-15:30; F 13:30-14:30

Lecture hours: MWF 12:30-13:25 (Location: SH 124)

Textbook: *Introduction to Electric Circuits* by Dorf & Svoboda
(9th ed., John Wiley & Sons, ISBN 978-1-118-47750-2, 2014)

Co-requisites: EE 271, MTH 202, and PHY 205

Course content: Overview of circuit analysis (Chapter 1)
Circuit elements, concepts, Ohm's law (Chapter 2)

Kirchhoff's laws and resistive circuits (Chapter 3)
Node voltage and mesh current analyses (Chapter 4)
Circuit theorems (Chapter 5)
Capacitors and inductors (Chapter 7)
Response of first-order switching dc circuits (Chapter 8)
Response of second-order switching dc circuits (Chapter 9)
Sinusoidal steady-state (ac) circuits (Chapter 10)

Grading policy: The total numerical grade is computed based on the following percentages:

- 20% for homework
- 50% for the two midterm exams (25% each)
- 30% for the final exam

The final letter grade in the course is assigned based on the following total numerical grade intervals out of a total of 100 points:

90–100	A^--A	(Excellent Performance)
80–89	B^--B^+	(Good Performance)
70–79	C^--C^+	(Average Performance)
60–69	D^--D^+	(Poor Performance)
<60	F	(Inadequate Performance)

Typically, the average of the total numerical grades is B^-.

Exam Dates: The exam dates are tentatively set as follows:

Midterm #1–Friday, February 20, 2015
Midterm #2–Friday, April 10, 2015
Final Exam*–Wednesday, April 29, 2015, 8:00-10:00
*Comprehensive and mandatory for all the students.

N☺-class Dates: Monday-Friday, March 9 through 13, 2015 (Spring Break)
Friday & Monday, April 3 & 6, 2015 (Thanksgiving Break)
Tuesday, April 14, 2015 (Founder's Day Presentations*)
*Attendance expected.

Homework: Weekly homework will be assigned. Solutions for each homework assignment will be provided on the due date. Homework assignments are mandatory, that is, every student is expected to do the homework assignments on time to qualify for consideration to receive a passing grade in the course.

Sorry, but, no late homeworks will be accepted!!☹
Therefore, no late homeworks will be expected!!☺

Laboratory: EE 271–Electrical Circuits Laboratory is a co-requisite for EE 261. In this laboratory, the students will learn to build, test,

and take measurements on real simple electric circuits. The EE 271 laboratory compliments the theory of circuits taught in EE 261 with hands-on practical experience.

_UP_'s code of academic integrity:

Academic integrity is openness and honesty in all scholarly endeavors. The University of Portland is a scholarly community dedicated to the discovery, investigation, and dissemination of truth, and to the development of the whole person. Membership in this community is a privilege, requiring each person to practice academic integrity at its highest level, while expecting and promoting the same in others. Breaches of academic integrity will not be tolerated and will be addressed by the community with all due gravity (taken from the University of Portland's Code of Academic Integrity).
The complete code may be found in the 2014-2015 University of Portland Student Handbook and as well the Guidelines for Implementation. It is each student's responsibility to inform him or herself of the code and guidelines.

Accomodation for disability:

If you have a disability and require an accommodation to fully participate in this class, contact the Office for Students with Disability (OSWD), located in the University Health Center (503-943-7134), as soon as possible.

University's Assessment Disclosure Statement:

Student work products for this course may be used by the University for educational quality assurance purposes.

Matching game (optional):

On the next page, you see the pictures of 16 extraordinary men who lived in the past and made significant contributions in the areas of electricity and magnetism. The names of these men are Andre Marie **Ampere**, Thomas Alva **Edison**, Michael **Faraday**, Benjamin **Franklin**, Luigi Aloisius **Galvani**, Oliver **Heaviside**, Hermann Ludwig Ferdinand von **Helmholtz**, Joseph **Henry**, Heinrich Rudolf **Hertz**, Gustav Robert **Kirchhoff**, James Clerk **Maxwell**, Edward Lawry **Norton**, Georg Simon **Ohm**, Nikola **Tesla**, Leon Charles **Thevenin**, and Alessandro Giuseppe Antonio Anastasio **Volta**. These names are provided in an alphabetical order

and don't match the order in which the pictures are provided. Can you match the names and the pictures?


A

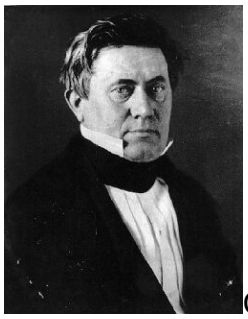

B


C


D


E


F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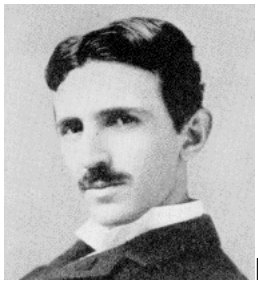
H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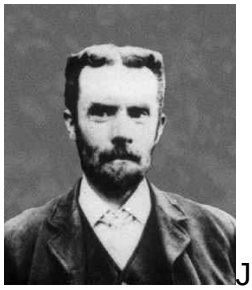
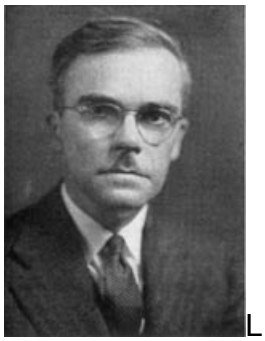
I


J


K

What is special about my 309th birthday?

Answer: If expressed as 1-17-2015, these digits add up to 17.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