

CASPER COLLEGE COURSE SYLLABUS

ES 2210: Circuit Theory

Semester/Year: Fall 2015

Lecture Hours: 4

Lab Hours: 2

Credit Hours: 4

Lecture Time: 12:00 – 12:50 PM

Day: MTThF

Room: PS 214

Lab Time: 2:00 – 3:50 PM

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GW 214

Instructor's Name:

Mr. Paul Marquard

Office Phone: 268-2250

Email: marquard@caspercollege.edu

Instructor's Contact Information: E-mail is the easiest way to get in touch with the instructor; e-mail is checked continuously while in the office and is checked at home multiple times. You may also call the instructor's office at any time; if the instructor is not available, leave a voice mail and your call will be returned as soon as possible.

Office Hours (tentative): MTTh 10 – 10:50 AM, T 1 – 1:50 PM, Th 11 – 11:50 AM or By Appointment

Course Description: ES 2210 is a basic course in electrical engineering circuit analysis for all engineering majors. Emphasis is placed on basic circuit theory, circuit modeling, analytical methods, network theorems, and first order circuits.

Statement of Prerequisites: ES 2120: Dynamics

Goal: To continue with the development of analytical thinking. Several techniques for circuit analysis and descriptions of power and energy in electrical circuits will be covered.

Outcomes:

- Investigate basic electrical terms (voltage, current, and resistance).
- Utilize Ohm's law to relate to basic electrical terms.
- Utilize Kirchoff's current and voltage laws in circuits.
- Determine electricity's actions in series and parallel circuits.
- Solution of circuits using matrix techniques.
- Define characteristics of operational amplifiers.
- Define characteristics of inductors and capacitors.
- Analyze time response of electrical circuits.
- Transform between ideal sources.
- Analyze frequency response of electrical circuits.
- Define and investigate energy conversion and electrical power.

Methodology: A mixture of lectures, laboratories, examples, and problem solving sessions will be used to meet the objectives. In addition, the student is expected to read the covered sections of the textbook. Hands-on laboratory investigations will supplement text information.

Evaluation Criteria: This grading scale may be lowered at any time. It will never be raised.

Homework 150
Quizzes 150
Laboratory Activities 200
Exams 300
Final Exam 200

Grades:

A: 900 - 1000
B: 800 - 899
C: 700 - 799
D: 600 - 699
F: 0 – 599

Required Text, Readings, and Materials: *Electric Circuits, by Nilsson & Riedel*, any edition, 8th provided

Calculator:

A standard scientific calculator (one that can do scientific notation, exponents and trigonometric functions) will suffice. Graphing calculators are allowed, but not necessary nor required. The calculator on a cell phone is probably **not** sufficient and definitely not allowed on quizzes and exams.

Class Policies:

You are encouraged to discuss course topics and assignments with one another. However, the homework turned in by each student must be that individual's own work. Assignments will be handed in on engineering computation paper with all parts labeled and complete work shown. Homework will be submitted on a daily basis, 3 – 5 problems per day. One problem will be randomly chosen for grading. Late homework will be docked 25% per day late. Assignments cannot be turned in after the corrected work has been returned or posted. No late materials will be accepted after the final exam.

Students are expected to read the chapter material listed on the schedule prior to coming to class. Quizzes may cover reading material before it is discussed in class. Most quizzes will cover material post lecture. The top 15 quizzes will be kept for grading purposes with a value of 10 points each. Missed quizzes will not be made up. They will be dropped.

Work not picked up by the end of the semester becomes the property of the instructor.

Exams will be taken as scheduled unless prior arrangements are made. Makeup exams must be prearranged. A makeup may be given at the discretion of the instructor depending on the reason, the status of the student's homework, and attendance. One 8.5" x 11" sheet of paper with notes is allowed on each exam. If there is a cancellation of classes on the day of an exam, the exam will be the next day classes meet.

The student is responsible for obtaining a scientific calculator approved by the instructor; and for making time to access a computer outside of class time to complete assignments.

All graded material must be saved in case the instructor loses the grades on the computer.

Last day to change to an audit or withdraw from the course is Nov 12, 2015

Student Rights and Responsibilities: Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

Chain of Command: If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director, the Dean, and lastly the Vice President for Academic Affairs.

Academic Dishonesty: (Cheating & Plagiarism) Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct for more information on this topic.

Official Means of Communication: Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are responsible to check their account regularly.

ADA Accommodations Policy: If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu. The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

TENTATIVE COURSE SCHEDULE (Subject to Change)

Date	Section	Comments	Homework Set
Aug 24-25		Syllabus, Systems of Equations, Complex Numbers	Worksheet One and Two
Aug 27-28	1.1 – 1.6, 4.1		Chapter 1: 1, 4, 8, 10, 12, 14, 19, 21, 27, 30
Aug 31-Sept 1	2.1 – 2.3		Chapter 2: 4, 5, 9, 14
Sept 3-4	2.4 – 2.5		Chapter 2: 17, 21, 25, 28, 30, 33
Sept 8-10	3.1 – 3.4		Chapter 3: 5, 6, 8, 10, 14, 15, 26, 28
Sept 14-15	3.5 – 3.7		Chapter 3: 32, 36, 40, 46, 56, 60, 66
Sept 17-18	4.2 – 4.4	Plus Exam Review	Chapter 4: 11, 14, 24, 29
Sept 21-22		Exam One	
Sept 24-25	4.5 – 4.9		Chapter 4: 34, 40, 46, 50, 52, 57, 60, 62
Sept 28-29	4.10 – 4.13		Chapter 4: 64, 67, 70, 75, 77, 84, 88, 97
Oct 1-2	5.1 – 5.3		Chapter 5: 3, 4, 5, 6,
Oct 5-6	5.4 – 5.7		Chapter 5: 8, 10, 14, 18, 21, 26, 29, 42
Oct 8-9	6.1 – 6.2	Plus Exam Review	Chapter 6: 1, 4, 11, 14, 15, 18
Oct 12-13		Exam Two	
Oct 15-16			
Oct 22-23	6.3		Chapter 6: 21, 25, 26, 28, 29, 31
Oct 26-27	7.1 – 7.4		Chapter 7: 5, 11, 23, 26, 41, 58
Oct 29-30	7.5 – 7.7		Chapter 7: 71, 75, 79, 84, 89, 94
Nov 2-3	9.1 – 9.2	Plus Exam Review	Chapter 9: 1, 4, 9
Nov 5-6		Exam Three	
Nov 9-10	9.3 – 9.6		Chapter 9: 11, 13, 14, 17, 28, 32, 33
Nov 12-13	9.7 – 9.12		Chapter 9: 36, 42, 47, 50, 55, 56, 61, 64
Nov 16-17	10.1 – 10.4		Chapter 10: 5, 11, 18, 19, 44
Nov 19-20	10.5 – 10.6		Chapter 10:
Nov 23-24		Exam Four	
Nov 30-Dec 1			
Dec 7-8			
Dec 10-11			
May 12 - 15		Final Exam	