

Instructor: Mike Steffancin
Office: RS 189
Office Hours: M-F 11:00 – 11:50 PM in RSB 189, T 2:00 – 3:50 in OLY 200, or by appointment
Phone: 768-6486
Email: msteffancin@sccd.ctc.edu
Class Schedule: MWF 2:00 – 3:35 PM
Room: OLY 200

Text: *Electric Circuits, 9th Edition*, by James Nilsson and Susan Riedel (with CD). Bring it to class. Any similar textbook or edition will do, but note that many 4 year colleges use this book for ENGR& 204 and the next course in the sequence, EE 233.

Website: ENGR& 204 website is at
<http://faculty.seattlecolleges.com/msteffancin/engr204/engr204.html>

Calculator: A scientific calculator is required for this course. Bring it to each class. I recommend one that can solve linear simultaneous equations (can handle matrices).

Software: Free OrCAD 16.3 Demo Software (Capture and PSpice only)
<http://www.cadence.com/products/orcad/pages/downloads.aspx#pspice>

Additional Help:

- Free individual tutoring (RSB 12) and in MAST (RSB 18)
- Engineering Open House and Open Lab. Every Tuesday from 2 PM to 3:50 PM in the physics classroom (OLY 200) will be open to work on labs, study, get help, get advising, or use the computers.
- The Engineering website has a lot of useful information for engineering students:
<http://dept.seattlecolleges.com/southengineering/>
- Video solutions available at <http://www.pearsonhighered.com/nilsson> if you have the access code (\$25 if you don't).

RST Academy and Onsite Scholarships

Join the RST Academy! South Seattle's Ready! Set! Transfer! program provides tools and support to start and keep you on a pathway to a STEM career. The RST Academy includes learning communities, peer mentoring, academic support, faculty mentors, seminars, guest speakers, and other resources including financial incentives to help you succeed. Also, ONSIGHT scholarships are available to talented, low-income students pursuing careers or transfer degrees in STEM fields. Visit www.seattlecolleges.com/rst/south for more info on how to apply.

Description: Basic circuits and systems concepts will be studied including resistors, sources, capacitors, inductors and operational amplifiers. Also solutions of 1st and 2nd order linear differential equations associated with basic circuit forms will be probed. Emphasis is placed on developing the student's ability to analyze any problem in a simple and logical manner. An introductory circuits lab is also included.

Learning Outcomes Addressed:

- Computation – Students will use mathematics appropriate for their field of study during in-class activities and homework. This includes solving simultaneous linear equations and differential equations.
- Communication – Students will get practice in both written and verbal communication through readings of technical lab documents and group activities.
- Critical Thinking and Problem Solving – Students will learn to think critically to help them solve complex problems assigned as homework, in group work and other in-class worksheets.
- Technology – Students will use calculators and the Internet to investigate topics. Students will also build electric circuits and use ORCAD PSpice software and MATLAB to model circuits.
- Information Literacy – Students will learn to access and evaluate information from a variety of sources including their book, the Internet and other class handouts.

Attendance: Attendance will not be taken but there could be occasional in-class activities that cannot be made up without the instructor's consent. Also, as we will cover approximately 1 chapter a week, if you miss class you will fall behind and your grade could suffer. I will not necessarily go back and review material in class just because you missed class. This means you will need to keep up with your reading of the material and your homework in order to learn that material for the exam. You are allowed to bring in a single 8.5" x 11" piece of paper with anything you want written on it for the exams. Also, you will be able to use Orcad Pspice to check your answers during exams, but you will get no credit for just turning in Orcad's answer.

Homework: There will be a graded homework assignment due just about every week. You may work on these assignments together, but each person must turn in their own work—there should be slight differences in how you each do your problems. You can help each other with your homework, but homework that is clearly copied from another student will result in a failing grade for ALL students involved. The homework question must be stated for each problem, all steps clearly shown and the correct answer must be clearly indicated or the homework will not be accepted—green engineering paper is required. For practice you should try as many end-of-chapter problems (besides those assigned as homework) as possible. I would be glad to go over any problems you aren't certain about. You should also read ahead of time the chapter being covered in class that week.

Laboratory: This course has four laboratories that can be performed anywhere using simple electronics instrumentation (a multimeter) and inexpensive electronics parts I will provide. These four labs are the same as the UW's EE 215 course labs. See lab 1 for more discussion of instrumentation and parts. There is no scheduled time and place for labs. You can do them any time you want between receiving the assignment and the due date, and any place you find convenient. You can work on them during the Engineering Open Lab or at home or any other location. **No class time will be spent doing lab**, though I will often stay after class for 30 minutes or more.

Performing the labs involves obtaining the necessary components (you will have most of them by the end of lab 1), putting together circuits on a breadboard, taking measurements with a multimeter, doing some calculations with your measurements and writing up the results. Extensive written lab reports are not required, nor is a lab notebook. Most lab results can be written on one or two sheets of paper. Your lab results are due by 2:00 PM two weeks after the labs were handed out. You will need to bring your circuits to be inspected by your instructor. **Failure to have your assembled circuit checked by me will result in a 20 point penalty.** This is to insure everyone has done the lab.

In order to ensure that each individual student obtains hands-on experience with putting together circuits and making measurements, everyone must assemble their own circuits, and write their own report. Working in groups is encouraged to help each other with the lab, and you can share multimeters (although you may find it more convenient to purchase your own). Note that it would generally be expected that slightly different measurements would be obtained by each individual—do not copy your lab partner's results. Each individual in a group must show the required circuits to their instructors. I will provide you with certain inexpensive parts, but you will have to buy the rest or you will only be able to work on lab during the Open Lab when you can use the school's equipment. The equipment you would need to buy is a multimeter and a breadboard kit, items that all serious electrical or computer engineers should own.

Grading: Your grade will be determined as follows: 3 tests worth 60% of your grade; in-class activities and homework 25 %, Labs 15%. The 3rd exam will be given at 1 PM on Monday June 14th (the final exam time). There will be an optional project that can be used to replace a low test score (assuming your grade on the project is higher.) More information on this project will be given later in the term.

Make-up Policy: No tests may be made up without permission from the instructor. A valid excuse is required. Please try to let me know in advance that you will miss a test. All make-up tests must be taken before the next class period (when everyone else's tests are handed back.) In-class activities can only be made-up with the permission of the instructor and late assignments (homework and labs) will automatically

be penalized 10% for every class period they are late. You may email me late assignments. All homework must be turned in before the solutions are posted on the website. After they are posted, no homework will be accepted.

Grading Scale:

Percentage	GPA	Percentage	GPA	Percentage	GPA	Percentage	GPA
95 – 100 %	4.0	86 %	3.1	77 %	2.2	68 %	1.3
94	3.9	85	3.0	76	2.1	67	1.2
93	3.8	84	2.9	75	2.0	66	1.1
92	3.7	83	2.8	74	1.9	65	1.0
91	3.6	82	2.7	73	1.8	64	0.9
90	3.5	81	2.6	72	1.7	63	0.8
89	3.4	80	2.5	71	1.6	62	0.7
88	3.3	79	2.4	70	1.5	Below 62%	0.0
87	3.2	78	2.3	69	1.4		

Student Misconduct: As defined in SCCD procedure 375.20 (WAC 133F-120-110). Attention is called to paragraphs (d) and (e) which identify the intentional disruption or obstruction of teaching or physical and/or verbal abuse of any person on campus premises as misconduct. Disciplinary sanctions for misconduct may include dismissal from the campus. By Procedure 375.40.4, an instructor has the authority to exclude a student from any class session in which the student is disorderly or disruptive. The Policy and Procedures manual is available for reading in the campus library. **Also, please turn off your cell phone and beeper before entering class.**

American Disability Act: If you need course adaptations or accommodations because of a disability; if you have emergency medical information to share with me; or if you need special arrangements in case the building must be evacuated, please contact me as soon as possible. You may also contact Disability Support Services office at 206-763-5137 in RSB 12 for assistance in developing a plan to address your academic needs.

Tentative Schedule:

Week	Chapters Covered	Comments
4/4 – 4/8	Ch. 1, 2	Circuit Variables, Circuit Elements
4/11 – 4/15	Ch. 2, 3	Circuit Elements, Simple Resistive Circuits.
4/18 – 4/22	Ch. 3, 4	Simple Resistive Circuits. Test 1 on Wednesday 4/20 on Chapters 1, 2 and 3. Techniques of Circuit Analysis
4/25 – 4/29	Ch. 4	Techniques of Circuit Analysis. No class on Friday 4/29.
5/2 – 5/6	Ch. 4	Techniques of Circuit Analysis
5/9 – 5/13	Ch. 4, 5	Techniques of Circuit Analysis, Operational Amplifiers.
5/16 – 5/20	Ch. 5, 6	Operational Amplifiers. Test 2 on Wednesday 5/18 on Chapters 4, 5. Inductance, Capacitance and Mutual Inductance.
5/23 – 5/27	Ch. 6, 7	Inductance, Capacitance and Mutual Inductance. Response of 1 st Order Circuits.
5/30 – 6/3	Ch. 7	No class on Monday 5/30. Response of 1 st Order Circuits.
6/6 – 6/10	Ch. 8	RLC Circuit Response.
6/16		Test 3 on Thursday 6/18 on Chapters 6 – 8 at 1 PM.

Disclaimer: The instructor reserves the right to change anything on this syllabus. Students will be informed verbally of any changes and new versions of the syllabus will be available from your instructor or at the course web site.