

# Circuit Analysis I

## Electrical Theory Class

ELT 120 | Syllabus | Winter 2018 | Albert McGilvra | [McgilvrAlbertW@jccmi.edu](mailto:McgilvrAlbertW@jccmi.edu)

**Time and Place:** Thursday 5:00 pm to 9:00 pm, JW 173

**Description:** Students examine the fundamental concepts of DC circuits including electricity and magnetism, resistance, capacitance, inductance, series and parallel circuits, power and basic electrical measurements

**Outcomes:** After completing this course, students will be able to:

- Understand the basic properties of electricity, and its applications
- Diagram and read circuit schematics
- Explain the differences in different types of resistors
- Build and describe series, parallel, and series-parallel circuits
- Explain and understand voltage and current dividers
- Use analog and digital meters
- Explain and use Ohm's and Kirchhoff's Laws to solve and analyze circuits
- Describe the properties of conductors and insulators
- Describe the function and application of batteries

**Text:** *Grob's Basic Electronics*. Schulz, Mitchel. 12<sup>th</sup> edition (including Experiments Manual and Problems Manual)

**Textbook Zero:** An online version of this text is available at:

<http://www.mheducation.com/highered/product/grob-s-basic-electronics-schultz/M0073373877.html#>

**Grading:** Your grade will be determined out of a total of 500 possible points earned throughout the duration of the course. The point breakdown is as follows:

Math Quizzes: 150 points

Electrical Theory Quizzes: 150 points

Lab Work: 100 points

Homework Problems/Attendance: 100 points

Final Grades will be assigned for the following scores:

- 4.0 92 – 100%
- 3.5 85 – 91%
- 3.0 80 – 84%
- 2.5 75 – 79%
- 2.0 70 – 74%
- 1.5 65 – 69%
- 1.0 60 – 64%
- 0.5 50 – 59%
- 0.0 0 – 54%

Attendance and participation are mandatory. Failure to attend each class and participate with enthusiasm could result in a lower grade. If you are unable to attend due to sickness, death in the family, or other Acts of God, please email the instructor as soon as you are able.

To pass this course, you need a 2.0 grade.

Only courses with passing grades count toward graduation or a certificate. Other colleges transfer in only courses with passing grades. Many financial aid sources, including most employers, require passing grades.

### **Incompletes**

No incomplete grades will be given in this class except under extraordinary circumstances and if the student has completed at least 75% of the work and has at least 2.0 in the course. The grade of "I" is not awarded to students who did not attend, or seldom attended, or to those who simply are not pleased with their final grades. Students receiving an "I" may submit the remaining work during the next class offering by attending the remainder of the class. Or, talk to me about specific arrangements to complete the remaining work in a manner that is acceptable to me. Students do not redo work that had already been graded. Students may drop the class up to the drop deadline as specified on the website calendar. See [http://www.jccmi.edu/student-services/registration/grading\\_system.htm](http://www.jccmi.edu/student-services/registration/grading_system.htm) for more info

### **Attendance, Participation grades (HQV), and Final Grades:**

Attendance is perhaps the most important predictor of success in this course. If you are unable to attend a class, inform the instructor as soon as possible. Based upon circumstances, any missed due dates or late work may be penalized or rejected at the discretion of the instructor. Typically a 10% reduction per day late will be assessed. Participation is not the same as showing up. It is important that you contribute to and benefit from the learning of others by sharing your observations, insights, and questions.

You will receive 3 HQV grades during the semester (see Participation Reporting, p16 of the JCC catalog). You can view your HQV grades and final grades in e-services on the JCC website, by clicking the students menu, then clicking the grades by term hotlink.

\* V means verify. It verifies that you are participating

\* H means you need help. You will be contacted by the Center for Student Success.

\* Q means you have been withdrawn from the course due to lack of attendance. Contact student service

### **Please Note:**

Students with disabilities who believe that they may need accommodations in this class are encouraged to inform the instructor and/or contact the office of Learning Support Services at 787-0800, extension 8270/8553 as soon as possible to ensure that such accommodations are implemented in a timely fashion.

**College Closing:**

Any cancellation of classes will be announced on the local radio stations. You can also call the switchboard (800) 787-0800. Also see <http://www.iccmi.edu/info/closings.htm>

In the case of a school closing I will email you with further instructions regarding our next class.

**Academic Honesty Policy**

The JCC Academic Honesty policy states that **academic honesty is expected of all students**. It is the ethical behavior that includes producing their own work and not representing others' work as their own, either by plagiarism, by cheating, or by helping others to do so. **Cheating is obtaining answers/materials from an outside source without authorization**. Cheating includes, but is not limited to: Plagiarizing in all forms, using notes/books without authorization, copying, submitting others' work as your own or submitting your work for others, altering graded work, falsifying data or exhibiting other behaviors generally considered unethical.

**Plagiarism is the failure to give credit for the use of material from outside sources**. Plagiarism includes but is not limited to: Using data, quotations, or paraphrases from other sources without adequate documentation, submitting others' work as your own, or exhibiting other behaviors generally considered unethical. **Faculty members who suspect a student of academic dishonesty may penalize the student by taking appropriate action up to and including assigning a failing grade for the paper, exam, or the course itself.**

<http://www.iccmi.edu/administration/deans/Policies/Academic%20Honesty%20Policy.doc>

**Conduct:**

Students are expected to behave in a mature, respectful manner in the classroom and laboratory. Use of computers, tablets, and phones during class is distracting to students and instructors. Do not be this person! If you need your phone on to monitor for emergencies, discuss options with the instructor prior to class. All cell phones and other devices will be turned off during exams or tests (calculators excluded).

**Calendar**

Week	Date	Topic
1	1/18	Chapter 1: Electricity, Chapter 2: Resistors
2	1/25	Chapter 3: Ohm's Law, Chapter 4: Series Circuits
3	2/1	Chapter 4: Series Circuits
4	2/8	Review
5	2/15	Test 1 (Chapters 1-4), Chapter 5: Parallel Circuits
6	2/22	Chapter 6: Series/Parallel Circuits
7	3/1	Chapter 6: Series/Parallel Circuits
8	3/8	Chapter 7: Voltage and Current Dividers
9	3/15	Review
10	3/22	Test 2 (Chapters 5 - 7), Chapter 8: Analog and Digital Meters
11	3/29	Chapter 9: Kirchoff's Laws
12	4/5	Chapter 11: Conductors and Insulators
13	4/12	Chapter 12: Batteries
14	4/19	Review
15	4/26	Test 3 (Chapters 8, 9, 11, 12)