

**Instructor:** Dr. S Olabisi  
**Office:** GOL (70) -1373

**Office Hours:** **Monday** 1:30 PM - 3:00PM  
**Wednesday** 1:00 PM - 3:00PM  
**Friday** 1:30 PM - 3:00PM  
**By appt** (see me directly/email me your availability)

Please see our myCourses site and my door for the most up to date office hours and of course feel free to stop in whenever my door is open. When possible, email me ahead of time if you will be stopping by during these hours as I occasionally get called to the lab or a meeting.

**Phone:** (585) 475-5726 or x5 5726 from on campus  
**E-mail:** [sooiee@rit.edu](mailto:sooiee@rit.edu) (**preferred method of contact** instead of the telephone)

**Course Name:** DC Circuits (Lecture)  
**Course Nos.:** EEET 111  
**Credit Hours:** 3  
**Co-Requisite:** MATH 111 (Pre-Calc or equivalent)  
DC Circuits Lab (EEET-112)

**Note – You MUST pass this lecture course AND DC Circuits Lab with a “C” or better in order to advance to AC Circuits Lecture and Lab**

**Course Time and Location:** -02: Mon, Wed, Fri 12:00PM – 12:50PM, GOL (70) - 2590  
-04: Mon, Wed, Fri 10:00AM – 10:50PM, SUS (81) - 3160

### Course Description:

This course is an introduction to DC circuit analysis techniques. Topics include voltage, current, resistance, circuit analysis techniques using Ohm's Law, current and voltage division, simplification of series, parallel and series-parallel circuits. Bridge and ladder networks are analyzed and Kirchhoff's Laws, and Mesh, Nodal, and Superposition analysis are covered. Thevenin and Norton Theorems are also used for circuit analysis. The Capacitor and Inductor circuit elements are introduced, and the charge/discharge characteristics of R-C and R-L circuits are studied.

### Rational and Goals:

Students, upon completion of this course should have the analytical tools to understand DC circuits and be able to solve DC circuits with sufficient proficiency to undertake further study.

### Intended Learning Outcomes:

A student who successfully fulfills the course requirements will have demonstrated:

- (1) The ability to define the characteristics of voltage, current, resistance and basic series, parallel, and series-parallel circuits.
- (2) Proficiency in the application of Ohm's law to determine voltage, current and power in a DC circuit.
- (3) Proficiency in the application of Kirchhoff's laws of voltage and current to DC circuits.
- (4) Proficiency in the application of Mesh, Nodal, Superposition, Thevenin and Norton Theorems, and maximum power transfer.
- (5) Competence in identifying and understanding the labeling formats for standard components.
- (6) The ability to analyze DC circuits by analytical means.
- (7) The ability to work individually to solve homework problems utilizing schematic diagrams and plots to demonstrate circuits principles.

(8) Determine the time constant and charge/discharge characteristics for R-C and R-L circuits.

**Required Materials:**

- Introductory Circuit Analysis, by R.L. Boylestad, Prentice Hall Publishing, 13<sup>th</sup> Edition
  - This text is also used in EEET-112 (DC Lab), EEET 121 (AC-Lecture) and EEET-122 (AC Lab) so please do NOT discard it at the end of the semester.
- SHARP EL-W516TBSL calculator (also used in EEET-112)
  - This is the ONLY approved calculator for quizzes and exams in EEET-111 and as such will be utilized extensively in lecture.
  - A more advanced graphing calculator that handles complex numbers, equations and calculations is required for EEET-121, EEET-122 and multiple department follow-on courses. Examples include the TI-89, TI-Nspire, HP-50G and HP-Prime series.

**Active Learning:**

Studies have shown that student recall and comprehension increase significantly when active learning techniques are employed. In order to meet the course learning objectives and better facilitate the learning process, active learning techniques will be used throughout the semester. These techniques include informal group activities, structured team activities, and significant problem based learning.

*As a side benefit of these techniques, we should be able to have some fun with the course material during the semester.*

**Lecture topics will include subjects from:**

Chapters 1 & 2 – Voltage and Current

Chapter 3 – Resistance

Chapter 4 – Ohm's Law, Power and Energy

Chapter 5 – Series DC Circuits

Chapter 6 – Parallel DC Circuits

Chapter 7 – Series/Parallel Circuits

Chapter 8 – Methods of Analysis

Chapter 9 – Network Theorems

Chapter 10 – Capacitors

Chapter 11 – Inductors

**Tentative Course Schedule/Outline:**

Week/Date	Lecture Subject	Text Sections (READ BEFORE CLASS)	Homework
1 (08/27)	Units of measurement, powers of ten, engineering notation, etc. ( <u>review this chapter on your own</u> ).  Voltage and Current (intro, units)	Ch 1: 1 through 13  Ch 2: 1 through 11	HW #1 Assigned
2 (09/03)	<b>Mon: Labor day, no classes</b>  Resistance, temperature effects, types of, color code, conductance, thermistors, etc.  Ohm's Law and power	Ch 3 : 1 through 14  Ch 4: 1 through 4	HW #1 Due HW #2 Assigned
3 (09/10)	Energy, efficiency, circuit breakers, Applications  Series Circuit Intro <i>Review/Catch-up</i>  <b>Exam #1 – Chapter 1.1 through 4.8</b>	Ch 4: 5 through 8  Ch 5: 1 through 4	HW #2 Due HW #3 Assigned
4 (09/17)	Series sources, KVL, voltage division, notation.  Voltage source internal resistance, loading effects, applications	Ch 5: 5 through 7  Ch 5: 8 through 13	HW #3 Due HW #4 Assigned
5 (09/24)	Parallel circuits, KCL  Current divider, o/c & s/c, voltage loading, applications.	Ch 6: 1 through 5  Ch 6: 6 through 13	HW #4 Due HW #5 Assigned
6 (10/01)	Series/Parallel – Reduction and return approach, block diagram approach  Ladder networks, voltage divider supply.  <b>Exam #2 – Chapter 5.1 through 6.13</b>	Ch 7: 1 through 5  Ch 7: 7 through 10	HW #5 Due HW #6 Assigned
7 (10/08)	<b>Mon: October break, no classes</b>  Current sources, source conversions, branch-current analysis	Ch 8: 1 through 3	HW #6 Due HW #7 Assigned
8 (10/15)	Mesh Analysis intro, with current sources, detailed examples	Ch 8: 4	HW #7 Due HW #8 Assigned
9 (10/22)	Nodal Analysis intro, with voltage sources, detailed examples Superposition	Ch 8: 6 Ch 9: 1 and 2	HW #8 Due HW #9 Assigned
10 (10/29)	Thevenin's theorem, Norton's theorem maximum power transfer  <i>Review/Catch-up</i>	Ch 9: 3 through 5	HW #9 Due HW #10 Assigned
11 (11/05)	Capacitors (intro, leakage current, types of, charging, discharge)  <b>Exam # 3- Chapter 7.1 through 9.5</b>	Ch 10: 1 through 6	HW # 10 Due HW # 11 Assigned

Week/Date	Lecture Subject	Text Sections (READ BEFORE CLASS)	Homework
12 (11/12)	Capacitors (discharge, initial values, series/parallel)	CH 10: 6 through 11	HW#11 Due HW#12 Assigned
13 (11/19)	Capacitors – energy stored, voltage, strays  <b>(Online class)</b> <b>Wed and Fri: Thanksgiving holiday, no classes</b>	Ch 10: 12 and 13	HW #12 Due HW # 13 Assigned
14 (11/26)	<i>Review/Catch-up</i>  Inductors (intro, types of inductors, R-L transients – storage cycle)	CH 11: 1 through 6	HW # 13 Due HW # 14 Assigned
15 (12/03)	Inductors (R-L transients – decay phase, series/parallel, DC inputs)  Final Exam Outline	CH 11: 7 through 14	HW # 14 Due HW#15 Assigned
16 (12/10)	Mon: Final Exam Review Session		HW#15 Due
<b>Final Exam Week</b> (12/12 – 12/19)	<b>FINAL EXAM</b>  TBA – See the SIS	Comprehensive	

**Last day to add/drop:** September 4<sup>th</sup>

**Last day to withdraw with a grade of “W”:** November 9<sup>th</sup>

### Evaluation Criteria

Several methods of evaluating course objectives will be employed including traditional testing and homework as well as quizzes.

### Homework:

- Homework will be assigned at the beginning of each week and due at the beginning of class (on Mondays) the following week. It is strongly recommended that you complete all of the homework problems. Experience indicates that those students not completing homework problems are more likely to do poorly in this course. Homework solutions will be posted online.
- The work shown is to be your own (you are expected to work together in your teams on the homework but *may not directly copy each other*) except for the team homework problem(s).
- Each homework assignment will be graded out of 20 points. Up to 10 points will be awarded based on your overall effort to seriously attempt each problem assigned **and to follow the proper format (see below)**. Five points will be decided upon by grading ONE SELECTED PROBLEM on each assignment. The remaining five points will be determined by grading the assigned TEAM HOMEWORK problem(s).
- Your individual homework solutions must be turned-in at the beginning of class each Monday. Your solution must be neat, organized, properly formatted and correct for full credit:

- **Use ONLY quadrille lined or green engineering paper**, no frayed or rough edges. You can purchase this paper in the bookstore or your favorite office supply store.
- **Place the following header information at the top of the first page** of your assignment:
  - Course number (including section) and semester
  - Your name, program code, due-date and homework number
  - Your instructor's Name
- **Place the following footer information at the bottom of all of the pages** of your assignment:
  - Your name
  - Page number (current\_page OF total\_pages)
- **Number each problem** including the chapter it comes from.
- **Restate each problem and include any supporting diagrams or schematics** that the problem statement refers to.
- **Your solution should be presented in a format that proceeds from left to right and top to bottom.** If the organization of the solution is unclear, a grade of zero will be assigned.
- **Box-in the final answer for each problem and make sure you use the appropriate units and engineering notation.**
- **Work that is illegible will receive a grade of zero.**
- **Use a pencil and an eraser or a pen and whiteout**, multiple cross-outs are unacceptable.
- **Make sure that all of the pages of your homework assignment are attached securely by using a staple in the upper-left-hand corner** (do not use a paperclip or fold your page corners).
- **LATE homework assignments WILL NOT BE ACCEPTED and a grade of zero will be assigned. If you are going to miss lecture, send your homework assignment to class on-time with a team member.**
- For the **TEAM HOMEWORK PROBLEM(S)**:
  - The team homework problem must also be submitted at the beginning of class on Mondays. **Follow the same format listed above except clearly place your TEAM NAME and the individual members' names who worked on the assignment on the top of the first page.**
  - You will submit one team homework assignment per team each week. **Any team member that does not work on this assignment will receive a zero for this portion of the weekly homework grade.**

**Quizzes:**

- Quizzes will typically be given on Fridays during the first 10 to 20 minutes of class. The quiz will be similar to assigned homework problems or lecture examples from the previous week or so. Quizzes will be closed book, closed notes. The lowest quiz grade will be dropped. There will be no makeup quizzes.
- There will be multiple unannounced/alternate quizzes based on recently covered or current course topics. These quizzes may be in the form of individual or team work or as in-class or out of class assignments.

- A few of the quizzes will be TEAM QUIZZES and as such, each team member is expected to contribute. Team members not contributing to these quizzes will receive a zero quiz grade for the assignment. Team members arriving late to these quizzes will take the quiz on their own in the time remaining.

### Tests (1 through 3):

- Three exams will be given during the Semester (see the attached schedule). You will be given the formula sheet from the textbook for use during each exam; otherwise, the exams will be closed book, closed notes.
- Make-up tests will be considered only if the student informs the instructor of the absence prior to the test date and missing that exam is due to a verified medical necessity. If prior notification is not possible, notification and verification must take-place immediately following the exam. In these cases a make-up test can be scheduled at the instructor's discretion but will not receive a grade greater than 70%.

### Final Exam:

- You will be given the formula sheet from the textbook (DC side only) for use during the final exam, otherwise the final is a closed book, closed-notes test. There will not be a make-up for the final.

### Attendance and Course Participation:

- Students are responsible for all material covered in lecture. This includes unforeseen changes to the quiz/exam schedules announced in class and/or online.
- Students are fully expected to attend class and participate in the team-based activities by working with their peers and the instructor as outlined each day.
- Course participation grades are based on attendance, interaction in class, homework and quiz completion rates as well as collaboration within student teams.

### Grading Policy:

Weekly homework	15%
Weekly quizzes	20%
Exams 1 - 3	30% (10% each)
Final exam	25%
Course participation	10%

The final course-grade is based on the following letter grade breakdown:

92 - 100	A
90 - 92	A -
88 - 90	B +
82 - 88	B
80 - 82	B -
78 - 80	C +
72 - 78	C
70 - 72	C -
60 - 70	D
Below 60	F

### Special Needs:

RIT is committed to providing reasonable accommodations to students with disabilities. If you would like to request accommodations such as special seating or testing modifications due to a disability, please contact the Disability Services Office. It is located in the Student Alumni Union, Room 1150; the Web site is [www.rit.edu/dso](http://www.rit.edu/dso). After you receive accommodation approval, it is imperative that you see me during office hours so that we can work out whatever arrangement is necessary.

### Incomplete ("I") and Withdraw ("W") grades:

Incompletes will only be given after week 10 of the semester for appropriate hardship situations (unexpected business trip, illness/death in the family, etc.). An incomplete grade WILL NOT be assigned to students failing and/or falling behind in their work.

Course withdrawal may be made online through the 12th week of the semester. In unusual circumstances beyond the control of the student, a "W" grade may be assigned after the 12th week with the approval of the instructor, department chair, & dean of the college. No credit hours are earned and your GPA is not affected by a "W" grade, however a 'W' will show on your transcript. "Unusual circumstances" do not include poor or lacking performance and the instructor will not sign late 'W' requests unless documented circumstances warrant such action.

### Other Course Policies:

- **Check the course My Courses site regularly** for additional course content, announcements or messages daily. If we need to contact you personally or the entire class, we will use the myCourses system so make sure that you check the conference daily and that your information is current in the RIT directory.
- As instructor, I reserve the right to modify anything on this syllabus including reading assignments, lecture topics, quiz/test dates, homework assignments, etc. I will do so with plenty of notice via in-class announcements and/or using myCourses.
- E-mail will almost always be responded to within 24 hours during the workweek, please do not expect a 20-minute turnaround although this may often be the case.
- Graded assignments will generally be returned to you within 7-10 days.
- Requests for the instructor to review a graded assignment must be received within 48 hours of the return of the assignment and will be honored at the instructor's discretion. Reviewing a graded assignment will result in a complete re-grade and may/may not have the desired outcome.
- Although you are *EXPECTED* and *ENCOURAGED* to create and utilize a study-group, individual and original efforts are expected for all exams, quizzes and homework assignments except when otherwise stated; for example team homework assignments are a team activity. Efforts of multiple students may result in equally divided scores for submitted work or appropriate disciplinary action.
- **Any student who is not actively participating in the lecture may be asked to leave.** *Please do not try to catch up on your sleep in class. Your team members and I are counting on you to be fully conscience during class time.*
- **Cellular/PCS telephones, pagers, smartphones, PDAs, etc. must be turned-off or put in silent mode during class and out of sight.** If your device disrupts the lecture, you may be asked to leave immediately. Upon a second offense, you will need to explain your actions to the ECTET Department Head before being allowed to return. *If you require an exception to this policy, please see me before creating a disturbance.*

**The devices mentioned above and all other electronic devices except approved calculators must be placed out of your reach and sight during quizzes and exams.**

- **You may not use a PDA, laptop (or other) computer, IPOD, smartphone or similar device in-class without instructor approval or during quizzes or exams.** *I know you may enjoy listening to music while working but have to insist that you leave the distractions out of the classroom.*
- **If you wish to take daily notes on your laptop or tablet computer, you need to email me directly and request permission during the first week of class.** I will randomly request a copy of your electronic notes and if you cannot provide them or are found to be using your device for non-course related activities during class, this privilege will be revoked. *I realize this may seem harsh but you and those around you will learn much better without distractions.*
- Bring the required textbook to all classes (one per team).

#### Academic Honesty

***Rochester Institute of Technology does not condone any form of academic dishonesty.***

**Any act of improperly representing another person's work as one's own is construed as an act of academic dishonesty.**

**These acts include, but are not limited to:**

- **Plagiarism in any form (including the use of all or parts of computer programs created by others without clearly indicating that you are not the author)**
- **The use of information and materials not authorized by the instructor during an examination**

If a faculty member judges a student to be guilty of some form of academic dishonesty, the student may be given a failing grade for that piece of work, or for the entire course, depending upon the severity of the misconduct.

If the student believes that the action taken by the instructor is incorrect, or that the penalty is too severe, the student may appeal to the Academic Conduct Committee of the college in which the course is offered.

#### Policy C 6.0: Policy Prohibiting Discrimination and Harassment

RIT is committed to providing a safe learning environment, free of harassment and discrimination as articulated in our university policies located on our governance website. RIT's policies require faculty to share information about incidents of gender based discrimination and harassment with RIT's Title IX coordinator or deputy coordinators, regardless whether the incidents are stated to them in person or shared by students as part of their coursework.

If you have a concern related to gender-based discrimination and/or harassment and prefer to have a confidential discussion, assistance is available from one of RIT's confidential resources on campus (listed below).

1. The Center for Women & Gender: Campus Center Room 1760; 585-475-7464; CARES (available 24 hours/7 days a week) Call or text 585-295-3533.
2. RIT Student Health Center – August Health Center/1st floor; 585-475-2255.
3. RIT Counseling Center - August Health Center /2nd floor - 2100; 585-475-2261.
4. The Ombuds Office – Student Auxiliary Union/Room 1114; 585-475-7200 or 585-475-2876.
5. The Center for Religious Life – Schmitt Interfaith Center/Rm1400; 585-475-2137.
6. NTID Counseling & Academic Advising Services – 2nd Floor Lynden B. Johnson; 585-475-6468 (v), 585-286-4070 (vp).



## Remember **RIT** Resilience

Success depends heavily on your personal health and well-being. **Recognize** that stress is an expected part of the college experience, and it often can be compounded by unexpected setbacks or life changes outside the classroom. Your instructors strongly encourage you to **reframe** challenges as opportunities for growth. **Reflect** on your role in taking care of yourself throughout the term, before the demands of exams and projects reach their peak. Please feel free to **reach out** to your professors about any difficulty you may be having that may impact your performance as soon as it occurs and before it becomes unmanageable. In addition to your academic advisor, you are strongly encouraged to contact a number of other support services on campus that stand ready to assist you.