Rev A – updated Wednesday Office hours
Rev B – updated Lab schedule

Instructor: **R. Jost Office:** ENT (082) - 2135

Office Hours:
Tuesday 1:00 – 2:00PM
Wednesday 1:00 – 2:00PM by email request
Thursday 1:00 – 2:00PM
By appointment (see me directly/email me your availability)
(These may change based on student schedules.)

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 wish to avoid conflicts with other students.

Phone: I do not have an assigned RIT phone number
E-mail: rwjiee@rit.edu (**preferred method of contact**)

Course Name:	**AC Circuits Lab**	
Course Nos.:	**EEET-121-01, 02, 03**	
Course Schedule:	**Section 01 Tuesday**	**4:00- 4:50PM ENT (082) Room 3125**
Course Schedule:	**Section 02 Tuesday**	**11:00-12:50PM ENT (082) Room 3125**
Course Schedule:	**Section 03 Thursday**	**4:00- 4:50PM ENT (082) Room 3125**
Course Schedule:	**Section 04 Thursday**	**11:00-12:50PM ENT (082) Room 3125**
Credit Hours:	1	

Prerequisites: **EEET-111** DC Circuits Lecture with a grade of C- or higher
EEET-112 DC Circuits Lab with a grade of C- or higher

Co requisites: **MATH-171** Calculus A or higher
EEET-121 AC Circuits Lecture

You MUST successfully complete this lab course AND AC Circuits Lecture in order to advance to Electronics I Lecture and Lab and Electrical Machines and Transformers Lecture and Lab

Course Description:

This laboratory course in AC circuits develops skills and practice in the design, fabrication, measurement and analysis of practical AC circuits used in electrical systems. Topics include network theorems, reactance and impedance, AC power and power factor, resonance, maximum power transfer, frequency response, and bandwidth.

Rational and Goals:

Students, upon completion of this laboratory, should be able to design, analyze, fabricate, troubleshoot and measure AC circuits of reasonable complexity with sufficient proficiency to undertake further study in machines and transformers, electronics and advanced circuit theory.

Course Learning Objectives:

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

(1) Work individually using simulation software to plot data obtained through simulation

(2) Use a circuit simulation package to analyze circuits in the time and frequency domain

(3) Individually generate a report that effectively and clearly demonstrates the data and results of a basic experiment

(4) Demonstrate basic skills in the use of the oscilloscope to measure circuit parameters

(5) Analyze AC circuits using analytical means

(6) Perform AC measurements in simple and relatively complex circuits

(7) Properly follow a schematic to construct basic circuits

Required Materials:

- *Introductory Circuit Analysis*, by R.L. Boylestad, Prentice Hall Publishing, 13th Edition

  (ISBN : 978-0-13-262226-4)

- **A more advanced calculator is STRONGLY recommended**. The TI-89 calculator is used in examples throughout the textbook and the HP 50G and HP Prime calculators are additional examples of advanced scientific calculators that handle complex numbers, calculations and equations extremely well. Without an advanced scientific calculator that handles complex numbers easily and within equations you will be at a distinct disadvantage for the latter two-thirds of this class.

  **** NO LOANER CALCULATORS WILL BE AVAILABLE, make sure you have a fully functional calculator with fresh batteries/charge for each lab and especially for the lab practical exams. ****

- Proto Board
- Thumb Drive for screen Captures
- EEET-122 Consumables Fee

Laboratory Topics and Tenative Schedule:

Week	Week Beginning (Mon)	Activity	Topic/Activity
1	14-Jan	Lab 1	Introduction to the Oscilloscope and Function Generator
2	21-Jan	**NO LAB**	Martin Luther King Jr. Day (no classes, University Open)
3	28-Jan	Lab 2	The Oscilloscope and Transient Analysis
4	4-Feb	Lab 3	R-L Transient Analysis and Practical Inductors
5	11-Feb	Project 1 - Week 1	Series and Parallel AC Circuits
6	18-Feb	Project 1 - Week 2	
7	25-Feb	Lab Practical 1	
8	4-Mar	Lab Practical re-take	Practical 1 (retake by invitation, max grade of 70%)
n/a	11-Mar	**NO LAB (Spring Break)**	
9	18-Mar	Lab 4	Series and Parallel R-L and R-C Equivalent Circuits
10	25-Mar	Lab 5	Network Theorems, Thevenin Equivalent Circuit
11	1-Apr	Lab 6	Power Factor and Power Factor Correction
12	8-Apr	Lab Practical 2	Similar to Labs 4,5 and 6
13	15-Apr	Project 2 - Week 1	Resonance/PCB
14	22-Apr	Project 2 - Week 2	
15	29-Apr	**TBD**	Reserved (do not make plans during this time)

Laboratory Administration:

- The majority of lab experiences in EEET-122 this semester will be performed in teams of 3 or 4 although some elements will be graded individually.
- Detailed lab documentation expectations and due dates will be established on an individual lab basis, however, in general:
  - Lab handouts will be posted on myCourses approximately 1 week before lab period in order to give you plenty of time to work the prelab and seek out clarifications or help.

- Prelab work must be completed before attending your scheduled lab as you will complete a prelab quiz at the beginning of your assigned lab period (don't be late).

- Laboratory exercises are typically one week assignments and involve pre-lab calculations and a quiz, lab work, and appropriate post-lab activities (quiz, questions, etc). Two lab projects will be assigned that will require more detailed documentation.
- There are two lab practical exams that are designed to assess the student's knowledge and skill in one or more areas e.g. DMM, circuit simulation, circuit construction, oscilloscope and function generator usage, etc. The exams are each one hour long and results must be submitted before leaving lab.

Laboratory Process:

1. Read the entire (POSTED) lab handout for familiarity and understanding of the expectations and procedures
2. Know your assigned role for this specific lab well. The four roles you will be rotating through for the various lab activities are:
    a. **Team Lead** - Reads the handout(s) well before lab in significant detail, working out expectations and ensures the team follows procedures for the lab. Asks questions regarding the handouts or procedures ahead of time when possible. Is responsible for the documented lab results and
    b. **Circuit Construction** - Builds the circuit(s) and ensures the entire team is familiar with the proto-board setup. Works closely with the Circuit Measurement team member.
    c. **Circuit Measurements** – Connects the equipment to the circuit, takes measurements and ensures the entire team is familiar with the equipment setup. Works closely with the Circuit Construction team member.
    d. **Interpreting and Communicating Results** - Interprets the measurement results and ensures the data passes the sanity check. Also communicates the results, answers questions in the handout and makes sure the team is in full agreement. Works closely with the Team Lead.
3. Seek clarification of questionable points (Instructor, library research, fellow students, the internet, etc.)
4. Perform the pre-lab to get a good idea of the expected results and the circuit/system behavior. Submit your prelab work or take the sanity check prelab quiz in advance of lab as specified.
5. Take the pre-lab quiz
    a. Generally given using myCourses during the first 10 minutes of your lab section and based heavily on the pre-lab work and lab handout
    b. If you are late to class or miss class, a grade of zero will be assigned
6. Perform the laboratory during your assigned section
    a. While performing the lab procedure, give your results and circuit behavior a "reality check" against pre-lab results.
    b. Record your results – those required, desired circuit behavior observations, etc.
    c. Get any required signatures
    d. Make sure all of your team members have access to the lab data (online drop-box)
7. Use "open lab" for any necessary follow-up
8. Take the post-lab quiz
    a. Generally given using myCourses and open from the end of your lab period.
    b. If you miss the quiz, a grade of zero will be assigned

9. Submit the required lab documentation for grading on the specified date.
    a. **LATE labs will not be accepted and a grade of zero will be assigned**
10. Review your instructor's feedback contained in the graded lab documentation

Excused Absences:

If you must miss lab due to a documentable family emergency, because you are hospitalized, or if a nurse or physician has instructed you not to attend class for medical reasons, the absence will be excused. Other compelling reasons for missing class may be considered acceptable excuses if they are approved by the instructor. Notify the instructor by e-mail either in advance of the absence or immediately afterward. Written documentation may be required and you will need to meet the posted deadline for lab submission and instructor signatures on your own accord in these instances.

Grading Policy:

Laboratory Assignments (6)	48%
Laboratory Projects (2)	22%
Laboratory Practical Exams (2)	30%

The final course-grade will be based upon 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, Room1150; the Web site is 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 conference (www pages) for additional course content, announcements or messages DAILY. If I need to contact you personally or the entire class, I will use the myCourses system so make sure that you check the conference daily and that your information is current in the system.
    - I strongly suggest you subscribe to SMS and/or email updates from the myCourses system
- I reserve the right to modify the reading assignments, lab topics, test dates and assignments. I will do so with plenty of notice via in-class announcements and/or myCourses announcements.
- 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.
- **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 lab, 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**.

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).