

Important Dates: (All times are Eastern Daylight Time)

| | | |
|------|-----------|---------------------------------|
| 6/27 | Thursday | - Class begins |
| 7/2 | Tuesday | - Last day to drop without W |
| 7/4 | Thursday | - July 4 th holiday |
| 7/9 | Tuesday | - Midterm Exam 1, 3:00PM-4:35PM |
| 7/17 | Wednesday | - Midterm Exam 2, 3:00PM-4:35PM |
| 7/22 | Monday | - Last day to drop with a W |
| 7/26 | Friday | - Midterm Exam 3, 3:00PM-4:35PM |
| 8/5 | Mon | - Final Exam, 3:00PM-6:00PM |

Modality: Online Asynchronous for content delivery. Synchronous for all exams. *Please note that exams must be taken at the specified dates and times listed above.*

Instructor: Richard E. Groff, regroff@clemsun.edu (Prefix subject line with “ECE2620:”)

Office Hours: Held via Zoom. See “Office Hours and Contact Information” page on Canvas for URL and most up-to-date information. Nominally Monday-Friday 3:00PM-4:00PM.

Prerequisites: ECE 2020, MATH 2060, PHYS 2210, each with a grade of C or better

Textbook: (required) J.W. Nilsson, Electric Circuits, 12th Edition, 2023, Prentice Hall.

Canvas: Canvas (<https://clemsun.instructure.com/>) is an electronic course management system that will be used to post major announcements, video lecture links, class notes, assignments, homework clarifications and hints, supplemental readings, links to other resources, grades, and so on. Canvas will also be used to collect homework assignments and submit exam answers. Canvas Discussion Boards will be used to post hints about homework problems and can be used to discuss homework problems and course concepts with other students in the course.

Class Communication: Canvas announcements and messages as well as email will be used to communicate with the class. **You should check both Canvas and your email daily**, since important information and reminders will be delivered this way. Please make sure that your email is properly configured at http://ccitutil.sites.clemson.edu/email_forwarding to deliver to the email account you wish to use. (By default, email should be sent to your g.clemson.edu address. Using the link above, you can also have email forwarded to other addresses, including non-Clemson addresses.) If you are writing to me by email, please use a university account (not a personal account), either from your home university or your assigned Clemson account. If you have any trouble receiving email, let the instructor know AND contact CCIT <https://ccit.clemson.edu/support/> for assistance.

Calculator: For this course you will need a calculator, such as the TI-89 Titanium or the TI-Nspire CX II CAS, that can perform matrix operations with both complex numbers and symbolic quantities and can symbolically simplify rational functions (ratios of polynomials of Laplace variable s) and perform partial fraction expansion. (The TI-84 does not easily support matrices of complex numbers or symbolic computation. The TI-Nspire CX, without the “CAS”, does not support symbolic computation.) A cell phone or tablet may NOT be used as a calculator on exams. A short comparison of calculators, calculator tutorial materials, and complex number calculator exercises are available on Canvas.

It is your responsibility to learn how to use your calculator!

Student Learning Outcomes: At the completion of this course, student should be able to:

1. Analyze electrical circuits operating at sinusoidal steady state using circuit laws and phasor-domain techniques.
2. Analyze power for electrical circuits operating at sinusoidal steady state.
3. Analyze transient response of electrical circuits using circuit laws and Laplace-domain techniques.

Course Description: The goals for this course are to provide the student with an understanding of, and a proficiency in the analysis of, electrical circuits containing both active and passive components under both steady-state and dynamic (time-varying) conditions. These goals will be accomplished by studying and applying the topics found in the topical outline below.

ECE 2620 is a “core” (fundamental, essential) course for all electrical and computer engineering majors. It is the second of two courses on basic electrical circuit analysis, the first course being ECE 2020 – Electric Circuits I. These two courses are among the most fundamental and important courses you will take in the ECE curriculum. Many future courses, both lecture and laboratory, are built on this material. Success in the junior level coursework requires mastery of this material, not only solving circuit problems but also understanding why the methods work and when they should be applied. Mastering the material will require study of the text and class notes, participation in discussions, and *especially* diligent practice of the homework problems.

Topical Outline

- | | |
|---|------------|
| 1. Sinusoidal Steady-State Circuit Analysis | (9 hours) |
| 2. Sinusoidal Power Calculation | (6 hours) |
| 3. Introduction to Three- Phase Networks | (3 hours) |
| 4. Laplace Transforms | (6 hours) |
| 5. Laplace-Domain Circuit Analysis | (6 hours) |
| 6. Frequency-Selective Circuits (Filters) | (4 hours) |
| 7. Two-Port Circuits | (2 hours) |
| 8. Ideal Op Amps | (2 hours) |
| 9. Exams | (3 hours) |

Online Course Policies:

ECE2620 is an online course this summer

- Please note that by department policy, Clemson University ECE courses are **intended for students living within three time zones of Clemson University (± 3 hours)**. All posted times, e.g. for homework submission deadlines, exam times, etc., will be provided in local time for Clemson University, i.e. Eastern Daylight Time. The student is responsible for translating the posted times into the corresponding times in the local time zone.
- You will interact with the content, instructor, and classmates in some way every weekday through a combination of videos, homework, and discussion boards, taking about **3-4 hours per day**.
- A Topical Outline and Schedule, available on Canvas, lists content coverage for each day. Videos and homework are also posted as assignments on Canvas. The schedule will help you with **time management, which is crucial** for the summer session version of this course.
- All materials, except for the textbook, will be provided through the university’s learning management system, Canvas.
- See the section Exams section below for further information on exam administration.

Grading: Grading will be based on a weighted average of the homework, three midterm exams, and a final exam. The expected weights and grade boundaries are :

| | | |
|--------------------------|-----|--------------|
| Homework | 10% | A 90% - 100% |
| Midterm Exams (18% each) | 54% | B 80% - 90% |
| Final Exam | 34% | C 70% - 80% |
| Other Activities | 2% | D 60% - 70% |
| | | F 0%- 60% |

Further details on calculation of the Midterm Exams grade and Homework grade are provided below.

Exams:

- There will be three midterm exams and a final exam. Due to the compressed schedule during the Summer II Session, there will be an exam about every 7 weekdays.
- Exam dates and times are listed at the top of the first page of the syllabus. All exams **MUST** be taken at the specified dates and times.
- All exams will be administered using Canvas and will be remotely proctored using Respondus LockDown Browser and Respondus Monitor. Respondus Monitor records webcam video and audio while you take the exam. The Respondus software is provided through a Clemson site license. **Further information about Respondus is provided in the Syllabus Addendum**, which is included as the last page of this document.
- A trial quiz will be set up and administered via Respondus LockDown Browser and Respondus Monitor during the first week of class. It is critical that you work out any issues with Respondus Monitor worked out *before* the first midterm exam. If Respondus Monitor does not successfully record video on the exam, you may receive a 0 on the exam.
- All exams are closed book and closed notes. You are permitted a handwritten one-page (front and back, 8.5"x11") note sheet of diagrams and *formulas*. The note sheet may *NOT* contain worked problems. The note sheet *may* contain diagrams and formulas for standard circuits, such as parallel and series combinations of impedances and the standard linear transformer circuit. Your name must be printed in the upper right corner of the note sheet.
- The exam format is multiple choice, administered through Canvas. You will also have to submit your written work, which must match your answers, though grading is based on the multiple choice answers.
- For all midterm exams and the final exam, students are permitted 1) writing utensils, 2) a calculator, and 3) a note sheet as described above.
- Use of additional materials on exams is strictly forbidden.
- Absolutely no collaboration is permitted on exams.
- You are expected to clear your calculator memory before each exam.
- Due to the short length of the semester, exam dates and times cannot be changed. Note especially that travel does not qualify for an alternative exam time. If a student expects to miss an exam due to significant illness or other extraordinary circumstance, please discuss the situation with the professor as early as possible.
- The Midterm Exams portion of the final grade will be computed as a weighted average of the midterm exam scores. The highest midterm percentage score will be weighted by 5/12, the middle score by 4/12, and the lowest score by 3/12. This calculation is performed outside Canvas and posted to Canvas.

Homework: Homework provides the *necessary practice* for mastering the concepts of the course. An important component of homework is learning how to start previously unseen problems given the concepts you have seen in class (as opposed to just using an example problem as a problem-solving “template”). Developing this skill will prepare you not only for exams in this course but also for subsequent courses that build on Circuits II material.

- Homework problems will be assigned and collected for credit via Canvas.
- Homework assignments:
 - Are assigned daily and focused on that day’s video(s). (Homework appear on Canvas a few days before it is officially assigned.)
 - Are typically due 1-2 days after they are assigned. Your goal should be to complete the homework on the day it is assigned. The extra day gives you time to seek help if needed. If you find yourself regularly starting homework on the day it is due, you are dangerously behind schedule and may have insufficient time to prepare for exams.
 - Must be prepared and submitted in accordance with the “**ECE2620 Homework Submission Guidelines**” document posted in the Syllabus tab on Canvas.
 - Multiple assignments will be open simultaneously. Be careful to submit the correct problems to the correct submission location!
- You should attempt every problem on your own. You are encouraged to discuss homework with your peers, in person or on the discussion boards, but you should start and finish problems yourself. All submitted work must be completed individually by you during the course.
- Homework answers (just the numeric answers, not full solutions) will be posted a few days before the assignment is due.
- Hints and tips for working selected homework problems will be posted in the Hints module on Canvas.
- Any resources (including solutions you may find) other than the provided course materials used while solving homework must be properly cited.
- Homework will be graded based on completion. You must show your work to receive credit.
- Late homework: To keep pace with the course, homework should be completed the day it is assigned, but homework is due a day or two after it is assigned.
 - Homework submitted within 12 hours after the posted deadline will not be penalized.
 - Homework submitted between 12 and 48 hours after the deadline will be penalized 50%.
 - Homework submitted more than 48 hours after the deadline **will receive a zero**.
- There will be approximately 25 homework assignments. **Failing to submit homework assignments will lower your final letter grade in the course.** Missing 6-10 assignments will drop one letter grade, missing 11-15 will drop two letter grades, missing 17 or more will drop 3 letter grades.

Other Activities

- Several preliminary activities will be assigned in the first week of class (e.g. posting to the “Welcome” discussion board, filling out an interest survey, reading some important course documents, taking a practice quiz using Respondus Monitor, etc.). Grades for these preliminary activities will be included in the “Other Activities” category on Canvas. The preliminary activities are mandatory. A student may be removed from the course if the student does not complete the preliminary activities in a timely fashion.

Academic Integrity: As members of the Clemson University community, we have inherited Thomas Green Clemson’s vision of this institution as a ‘high seminary of learning.’ Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form. In instances where academic standards may have been compromised, Clemson University has a responsibility to respond appropriately to charges of violations of academic integrity. Further information on Academic Integrity can be found in the [Undergraduate Announcements](#) and in the [Graduate School Policy Handbook](#).

ECE2620-Specific Policies: Collaboration between students on homework assignments is allowed under the guidelines presented above. Keep in mind that the exams will draw from the material covered in the homework, thus it is advantageous for each student to understand every homework question. Absolutely no collaboration is permitted on exams. Note: Use of stored equations or other course material in a calculator during an exam is a violation of academic integrity.

Accessibility: Clemson University values the diversity of our student body as a strength and a critical component of our dynamic community. Students with disabilities or temporary injuries/conditions may require accommodations due to barriers in the structure of facilities, course design, technology used for curricular purposes, or other campus resources. Students who experience a barrier to full access to this class should let the instructor know and make an appointment to meet with a staff member in Student Accessibility Services as soon as possible. You can make an appointment by calling 864-656-6848, by emailing studentaccess@lists.clemson.edu, or by visiting Suite 239 in the Academic Success Center building. Appointments are strongly encouraged – drop-ins will be seen, if at all possible, but there could be a significant wait due to scheduled appointments. Students who have accommodations are strongly encouraged to request, obtain and send these to their instructors [through the AIM portal](#) as early in the semester as possible so that accommodations can be made in a timely manner. It is the student’s responsibility to follow this process each semester. You can access further information at the [Student Accessibility website](#). Other information is at the university’s [Accessibility Portal](#).

ECE2620-Specific Policies: Please submit accommodation letters for ECE2620 as soon as possible. In order to receive accommodations on an exam, an accommodations letter must be received by the instructor at least 4 business days before the exam date.

Title IX: Clemson University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender, pregnancy, national origin, age, disability, veteran’s status, genetic information or protected activity in employment, educational programs and activities, admissions and financial aid. This includes a prohibition against sexual harassment and sexual violence as mandated by Title IX of the Education Amendments of 1972. This Title IX policy is located on the Campus Life website. Ms. Alesia Smith is the Clemson University Title IX Coordinator, and the Executive Director of Equity Compliance. Her office is located at 223 Brackett Hall, 864-656-0620. Remember, email is not a fully secured method of communication and should not be used to discuss Title IX issues.

Clemson University aspires to create a diverse community that welcomes people of different races, cultures, ages, genders, sexual orientation, religions, socioeconomic levels, political perspectives, abilities, opinions, values and experiences.

Emergency Preparation: Clemson University is committed to providing a safe campus environment for students, faculty, staff, and visitors. As members of the community, we encourage you to take the following actions to be better prepared in case of an emergency:

- a. Ensure you are signed up for emergency alerts (<https://www.getrave.com/login/clemson>)
- b. Download the Rave Guardian app to your phone (<https://www.clemson.edu/cusafety/cupd/rave-guardian/>)
- c. Learn what you can do to prepare yourself in the event of an active threat (<http://www.clemson.edu/cusafety/EmergencyManagement/>)

Copyright: Materials in this course are copyrighted. They are intended for use only by students registered and enrolled in this course and only for instructional activities associated with and for the duration of the course. They may not be retained in another medium or disseminated further. They are provided in compliance with the provisions of the Teach Act. Students should be reminded to refer to the Use of Copyrighted Materials and “Fair Use Guidelines” policy in on the Clemson University website for additional information: <https://clemson.libguides.com/copyright>.

Modification: The instructor reserves the right to modify any aspect of the syllabus at any time during the semester for reasons including but not limited to COVID-related situations.

Syllabus Addendum: Remote Proctoring using Respondus

This course requires the use of LockDown Browser and a webcam for online exams. An external webcam (that connects through USB) is required so that the camera can be placed far enough away so that your writing and face are both simultaneously visible in the camera view. Watch this [short video](#) to get a basic understanding of LockDown Browser and the webcam feature. A student [Quick Start Guide](#) is also available.

Then download and install LockDown Browser from this link:
<https://www.clemson.edu/online/tools/responduslockdown.html>

To ensure LockDown Browser and the webcam are set up properly, do the following:

- Start LockDown Browser, log into <https://www.clemson.edu/canvas/>, and select ECE2620.
- Locate and select the **Help Center** button on the LockDown Browser toolbar.
- Run the **Webcam Check** and, if necessary, resolve any issues.
- Run the **System & Network Check**. If a problem is indicated, see if a solution is provided in the Knowledge Base. Troubleshooting information can also be emailed to our institution's help desk.
- Exit the Help Center and locate the practice quiz named (Posted by first day of class)
- Upon completing and submitting the practice quiz, exit LockDown Browser.

When taking an online exam that requires LockDown Browser and a webcam, remember the following guidelines:

- Ensure you're in a location where you won't be interrupted
- Turn off all other devices (e.g. tablets, phones, second computers) and place them outside of your reach
- Clear your desk of all external materials not permitted, such as books, papers, other devices
- The webcam must **simultaneously show your face and your workspace** (paper you are writing on). This requires use of an external webcam, rather than the camera built into your laptop.
- Before starting the test, know how much time is available for it, and that you've allotted sufficient time to complete it
- Remain at your computer for the duration of the test
- If the computer or networking environment has changed in any way since the last time you ran the **Webcam Check** and **System & Network Check** in LockDown Browser, run the checks again prior to starting the test
- To ensure a webcam video with sufficient quality, do the following:
 - Avoid wearing baseball caps or hats with brims
 - Ensure your computer or tablet is on a firm surface (a desk or table). Do NOT have the computer on your lap, a bed or other surface where the device (or you) are likely to move
 - If using a built-in webcam, avoid tilting the screen after the webcam setup is complete
 - Take the exam in a well-lit room and avoid backlighting, such as sitting with your back to a window
 - Make sure the camera is positioned so that your face and writing are **simultaneously** visible in the camera view.
- Remember that LockDown Browser will prevent you from accessing other websites or applications; you will be unable to exit the test until all questions are completed and submitted.

Please take care in setting up Respondus Monitor. If Respondus Monitor does not successfully record video for your exam or if the video does not adequately show you and your workspace, you will receive a zero for the exam.