

ECE 210/211 - Fall 2025

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ECE 210 is the first mathematically oriented course in the electrical and computer engineering curricula. The course begins by building on the circuit analysis concepts you learned in ECE 110 and then progresses into the more abstract world of Fourier and Laplace transforms. Much of what we will do will rely on your background in calculus. Our goal will be to apply mathematical tools to the analysis and design of signal processing systems, culminating in a thorough understanding of an AM radio receiver and the ability to design simple filters. ECE 210 deals with the processing of continuous-time, or analog signals. The follow-on course, ECE 310, covers the processing of sampled, or digital signals. Full description, including course goals and instructional objectives, can be found [here](#).

ECE 211 is the first half of ECE 210. Students in ECE 211 should attend lectures *approximately* through Friday, October 17 (Chapters 1 through 6 in the course textbook). Full description, including course goals and instructional objectives, can be found [here](#).

Course information in course explorer: [ECE 210](#), [ECE 211](#).

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Section:	ECE 210 AL1 ECE 211 B	ECE 210 AL2 ECE 211 C	ECE 210 AL3 ECE 211 D	ECE 210 AL4 ECE 211 E
Instructor:	Olga Mironenko slides	Juan Alvarez slides	Craig Shultz slides	Victoria Shao slides
Lectures:	MTW F 10-10.50 a.m. ECEB 1013	MTW F 11-11.50 a.m. ECEB 1015	MTW F 12-12.50 p.m. ECEB 1013	MTW F 2-2.50 p.m. ECEB 1013
Contact:	4066 ECEB olgamiro@	3046 ECEB alvarez@	3038 ECEB shultz88@	5048 ECEB yangshao@

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ATTENDANCE

Lecture attendance is not required but is **strongly** recommended in order for you to learn the course material well and obtain a good grade in the course. Active participation in your learning environment is vital to your success in this course. If you miss a lecture, you can watch it in the [course's Mediaspace channel](#)

Communication: It is the student's responsibility to attend lectures and check their email and Canvas daily, in case there are announcements from course staff. Missing a lecture and/or not checking your email will not excuse complying with course deadlines and policies.

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COURSE MATERIALS

Textbook: Kudeki & Munson, *Analog Signals and Systems* Prentice Hall, 2009. You will be expected to read the textbook in preparation for lectures according to the [assigned reading schedule](#).

[Corrections to the text book \(errata\)](#)

[Useful tables](#) (Fourier series, Fourier transform, convolution, delta function, Laplace transform, important functions)

- [A theoretical paper on Fourier series](#)
 - [Getting the angle of a complex number analytically, using matlab and python.](#)
 - [Mechanical machine for calculating Fourier series coefficients and reconstructing original signal from those coefficients.](#)
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DISCUSSION

Active participation in your learning environment is vital to your success in this course.

Piazza: For discussions and questions regarding course material.

Student online behavior: In any social interaction, certain rules of etiquette are expected and contribute to more enjoyable and productive communication. The following are tips for interacting online via e-mail or discussion board messages, adapted from guidelines originally compiled by Chuq Von Rospach and Gene Spafford (1995):

- Remember that the person receiving your message is someone like you, deserving and appreciating courtesy and respect.
 - Be brief; succinct, thoughtful messages have the greatest effect.
 - Your messages reflect on you personally; take time to make sure that you are proud of their form and content.
 - Use descriptive subject headings in your e-mails.
 - Think about your audience and the relevance of your messages.
 - Be careful when you use humor and sarcasm; absent the voice inflections and body language that aid face-to-face communication, Internet messages are easy to misinterpret.
 - When making follow-up comments, summarize the parts of the message to which you are responding.
 - Avoid repeating what has already been said; needless repetition is ineffective communication.
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GRADING POLICIES

It is the student's responsibility to check that the correct grades are entered in [CANVAS](#).

The final grade will be calculated as follows:

Grading for ECE 210:

Midterm exams (3).....	45%
Final Exam.....	25%
Quizzes (3).....	10%
Weekly homework (14).....	10%
Labs (5).....	10%

Grading for ECE 211:

Final Exam (Exam 2).....	35%
Midterm exam.....	30%
Quizzes (2)	25%
Weekly homework (8).....	10%

In order to account for sickness, travel or internet issues, your two lowest homework grades will be dropped (only one for ECE 211). Homework assignments vary in total points, but they contribute equally to the final grade. Therefore, you need to rescale each one by the total points in the corresponding homework assignment before calculating the average.

Quizzes vary in total points, but they contribute equally to the final grade. Therefore, you need to rescale each one by the total points in the corresponding quiz before calculating the average.

Labs vary in total points, but they contribute equally to the final grade. Therefore, you need to rescale each one (lab+prelab) by the total points in the corresponding lab+prelab before calculating the average.

ECE 210 students can have their worst midterm grade replaced by their final exam grade (if it is higher).

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- some type of **D** or better if
 - $\max(50, m-2s) < \text{grade} < \min(m-s, 70)$
 - **F**
 - $\text{grade} < \max(50, m-2s)$
-

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HOMEWORK ASSIGNMENTS

Homework assignment policy:

- Homework assignments constitute 10% of the course grade: 14 HWs for ECE 210 and 8 HWs for ECE 211. Homework assignments vary in total points, but they contribute equally to the final grade. Therefore, you need to rescale each one by the total points in the corresponding homework assignment before calculating the average. Some homeworks have PrairieLearn and/or survey components that are submitted outside Gradescope, so Canvas has separate columns for them, but their points get added to the total points for that homework assignment when calculating grades.
- Homeworks will be assigned weekly and due *mostly* before midnight on Tuesdays. The first homework will be due on Wednesday, September 3.
- Submissions will be made mostly via [Gradescope](#).
 - Instructions for uploading your solutions to Gradescope can be found [here](#).
 - Gradescope now has a [mobile app](#) to make it easier to upload.
 - Instructions on how to scan the pdf of the solutions in Android are [here](#).
 - Instructions on how to scan the pdf of the solutions in MacOS are [here](#).
- To solve the homework, you may use blank paper and scan or you may use your tablet. However, do **not** solve the HW directly on the provided pdf because there is not enough space for it and you will most likely **lose** points due to lack of neatness. You do not need to include the problem statements, just your solutions.
- Late homeworks will only be accepted up to 1 hour after the deadline with a deduction of 10% of the total points (no negative final score), so please **mark** your calendar with the deadlines to avoid losing some/all points. Do not wait until the last minute to submit it and then run into internet issues because we will not give you an extension. Submit your HW as soon as you finish it because if you wait and forget to do it on time, we will not give you an extension.
- In order to account for sickness, travel or internet issues, your two lowest homework grades will be dropped (only one for ECE 211). Homework assignments vary in total points, but they contribute equally to the final grade. Therefore, you need to rescale each one by the total points in the corresponding homework assignment before calculating which ones are dropped.
- Make sure you box your final answers and match problem parts accurately in Gradescope, or you will be **deducted** a percentage of the corresponding problem part.
- Make sure your submission is complete before logging out of Gradescope because we will not give an extension if you do not complete the submission. You will receive an automated email from Gradescope that includes the date and time you turned in the assignment, so make sure you get it.
- Make sure that your homeworks are neat enough to read. Graders has the flexibility to **deduct** points for lack of neatness. Graders should not have to guess what you wrote and in where in the page you wrote it. An easy to follow solution with each part clearly identified is **required**. Do not use software that merges multiple pages into a single pdf page because it is very hard to read and you will most likely get no points.
- Homeworks constitute an essential component of your learning experience in the course and prepare you for your exams in effective ways. Investing time to do your homeworks with care will pay off when you are taking your exams.

someone else's solution is not acceptable and may lead to sanctions and an **academic integrity violation** case being opened against you.

- Using previous semester homework solutions and online solutions (Chegg, etc.) may lead to sanctions and an '**academic integrity violation**' case being opened against you.
- Please keep these cautionary remarks in mind as you are working out your assignments and **avoid** submitting unsubstantiated solutions to avoid any misinterpretations.
- Sanctions for *academic integrity violations* range from a letter grade reduction to an F in the course.
- Solutions will be posted in [Canvas](#) 1 hour after the corresponding deadline.
- You must report angles in radians and in the range (-pi,pi] and simplify fractions to lowest terms. Failure to do so could result in loss of some credit.
- Regrades: if after looking at the posted solutions, you feel there was an inaccuracy in the grading of your homework, you can request a regrade within Gradescope itself.

Make sure you submit regrade requests before midnight of the Tuesday after your graded homework is made available via Gradescope. Regrades will **not be accepted** after that date.

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EXAMS

- Exams constitute 70% of your ECE 210 grade or 55% of your ECE 211 grade.
- Exams will be combined for all sections of ECE 210 and 211.
- ECE 210 students will take three evening exams and a final exam. Your final exam will replace your lowest midterm if you score higher on it.
- ECE 211 students will take just the first two exams. The second exam will serve as the final exam for ECE 211 students.
- To compensate for the evening exams, one lectures will be canceled on exam weeks.
- Exams are closed notes. However, we will provide the following tables from the textbook: 6.1, 6.3, 7.1, 7.2, 9.1, 9.3, 11.1 and 11.2 (or 1-8 from the online [table handout](#)) as needed.
- Calculators and other electronics are not allowed
- DRES: Students with documented disabilities must notify Prof. Alvarez within the first 7 days of classes.

The exams dates/times are as follows:

- **Exam 1:**
 - Wednesday, September 24, 7.15-8.30pm.
 - Location: TBA.
 - Review: Tuesday, September 23, 7-9 p.m., 3081 ECEB.
 - HKN Review: Saturday, September 20th, 2025, 3:00pm - 5:30pm, ECEB room 1015..
 - Coverage: Exam 1 will cover up to the end of Section 3.4.2 and homeworks 1-4.
 - Room assignments: Students with last names starting with:
 - Aa - Lj will go to room ECEB 1002
 - Lk - Nf will go to room ECEB 2017
 - Ng - Sf will go to room ECEB 1015
 - Sg - Vb will go to room ECEB 1013
 - Vc - Zz will go to room ECEB 3017
- **Exam 2:**
 - Wednesday, October 22, 7.15-8.30pm.
 - Room assignments: Students with last names starting with:
 - Aa - Cf will go to room ECEB 2017
 - Cg - Fp will go to room ECEB 1015
 - Fq - Iz will go to room ECEB 3017

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• **Exam 3:**

- Wednesday, November 19, 7.15-8.30pm.
- Room assignments (changed from Exam 2): Students with last names starting with:
 - Aa - Cz will go to room ECEB 1013
 - Da - Hf will go to room ECEB 1015
 - Hg - Mf will go to room SIEBL 1404
 - Mg - Tf will go to room DCL 1320
 - Tg - Zz will go to room ECEB 2017
- Review: Tuesday, November 18, 7-9 p.m., 3081 ECEB.
- HKN Review: Room: ECEB room 1015, Date: Saturday, November 15th, 2025, Time: 3:00pm - 5:30pm
- Coverage: Exam 3 will cover up to and including section 10.5 and homeworks 1-12, with emphasis on material after exam 2. We will provide the following tables: Fourier series, Fourier transform, convolution, impulse and important signals (6.1, 6.3, 7.1, 7.2, 9.1 and 9.3 from the textbook, or 1-6 from the online [table handout](#)).

• **Final Exam:**

- Date: Monday, December 15, 1.30-4.30pm.
- Location: TBA.
- Review: Wednesday, December 10, 7-9pm, 1015 ECEB.
- HKN Review: ECEB room 1002, Date: Saturday, December 13th, 2025, Time: 12:30pm - 3:00pm.
- Coverage: Exam will cover up to the end of Section 11.5 and homeworks 1-14.
- We will provide the following tables: Fourier series, Fourier transform, convolution, impulse, Laplace transform and important signals (6.1, 6.3, 7.1, 7.2, 9.1, 9.3, 11.1 and 11.2 from the textbook, or 1-8 from the online [table handout](#)).
- **Conflict exam:** If you satisfy the requirements for a conflict exam you must complete [this form](#) by December 10. Late requests will most likely not be granted.

Midterm conflict exam requests:

- Our midterm exam schedule is posted since before the first day of the semester.
- Some of you either have classes, labs, or other exams that overlap with our exams. We will offer conflict exams for those of you who are in these situations but you need to get Prof. Alvarez's approval in order to be able to take the conflict exams.
- As indicated in the [student code](#), conflict exams are to be granted if the student informs the instructor of the conflict within one week after being informed of the examination schedule. Priority will be given to the examination announced in class the earliest in the semester.
- If you have conflicts with one or more of our exams and want to request a conflict exam, you must complete [this form](#) by September 9 at 11.59pm.
- If you do not complete the form by the deadline, we are not required to grant a conflict exam, so you might not get one.
- If you do not have access to the form, please email Prof. Alvarez.

Absences from exams: If you miss an exam due to illness, injury, family emergency or other reasons beyond your control, you will be asked to provide your professor with an absence letter from the Student Assistance Center in the Office of the Dean of Students. Documentation which validates the absence is required by the Dean's Office to provide the absence letter. The absence letter will serve to verify the reason for your absence from the exam. Your midterm exam grade will be replaced by an average of your other three exams. However, this will only apply to one midterm exam, if you miss more than one midterm exam, then the others will receive a zero.

Regrades:

- We will use Gradescope to grade the exams,. If **after** looking at the posted solutions, you feel there was an **inaccuracy** in the grading of your exam, you can request a regrade within Gradescope itself.
- Do **not** submit a regrade asking for more partial credit because you did so much work **nor** because you think something should be worth more/less than it does. Only regrades regarding inaccurate grading will be addressed.
- Regrades could be subjected a regrading of the **entire** exam, no just those parts you indicate. Therefore, your grade could go up or down as appropriate.
- You will get an email from the instructors after the exams are graded indicating when you can start submitting regrades and when the deadline to submit the regrades is.
- Make sure you submit regrade requests by the deadline indicated in that email, so do not wait until the last minute to submit it and then run into internet issues. No regrade requests will be accepted after the deadline.

Old exams for practice can be found [here](#).

- Quizzes constitute 10% of your ECE 210 grade or 25% of your ECE 211 grade.
- Quizzes vary in total points, but they contribute equally to the final grade. Therefore, you need to rescale each one by the total points in the corresponding quiz before calculating the average.
- Quizzes will be administered using [PrairieLearn](#) at [CBTF](#) over a 4 day period on the dates below.
- You must register for the quizzes through the [PrairieTest](#) website.
- You can register as early as two weeks before the quiz and we **strongly** recommend you sign up for the first day, in case you get sick. If you sign up for the last couple of days and you get sick, you might **not** be granted an extension.
- ECE 210 students will take three quizzes.
- ECE 211 students will take just the first two quizzes.
- Quizzes are closed notes. However, we will provide the following tables from the textbook: 6.1, 6.3, 7.1, 7.2, 9.1, 9.3, 11.1 and 11.2 (or 1-8 from the online [table handout](#)) as needed.
- DRES: Students with documented disabilities must notify Prof. Alvarez and [CBTF](#) within the first 7 days of classes.

The quiz dates/times are as follows:

- **Quiz 1:**
 - September 11-14.
 - You can begin registering for the quiz through [PrairieTest](#) on August 28.
 - Coverage: Quiz 1 will cover up until and including section 2.4.1.
- **Quiz 2:**
 - October 9-12.
 - You can begin registering for the quiz through [PrairieTest](#) on September 25.
 - Coverage: Quiz 2 will cover up until and including section 4.3, with emphasis on material after exam 1.
- **Quiz 3:**
 - November 6-9.
 - You can begin registering for the quiz through [PrairieTest](#) on October 23.
 - Coverage: Quiz 3 will cover up until and including section 8.4, with emphasis on material after exam 2. We will provide the following tables if needed: Fourier series, Fourier transform and important signals (6.1, 6.3, 7.1, 7.2 from the textbook, or 1-4 from the online [table handout](#)).

CBTF instructions:

- This course uses the Grainger College of Engineering's [Computer-Based Testing Facility](#) for its quizzes.
- The policies of the CBTF are the policies of this course, and academic integrity infractions related to the CBTF are infractions in this course.
- If you have accommodations identified by the [Division of Rehabilitation-Education Services \(DRES\)](#) for quizzes/exams, please submit your Letter of Accommodations (LOA) [here](#) before you make your first quiz reservation. This must be done each semester you use the CBTF.
- If you have any issue during a quiz, inform the proctor immediately. Work with the proctor to resolve the issue at the time before logging off. If you do not inform a proctor of a problem during the test then you forfeit all rights to redress.
- If you do not have a physical i-card, and therefore no ID photo with the i-card office, submit a photo to the CBTF as soon as possible to avoid problems when checking in for quizzes. Email photos to [cbtf@illinois.edu](mailto:cbt@illinois.edu).
- Review all instructions on the CBTF website before your first quiz: <https://cbtf.illinois.edu/students>

Absences from quizzes: we **strongly** recommend you sign up for the first day, in case you get sick. If you sign up for the last couple of days and you get sick, you might **not** be granted an extension. If you miss a quiz due to illness or family emergency or other reasons beyond your control that last more than a couple of days, you will be asked to provide your professor with an absence letter from the Student Assistance Center in the Office of the Dean of Students. Documentation which validates the absence is required by the Dean's Office to provide the absence letter. The absence letter will serve to verify the reason for your absence from the quiz. Prof. Alvarez will then take an appropriate action that may include offering an oral examination or written examination.

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in the corresponding lab+prelab before calculating the average.

Lab kit:

- You **must** get a lab kit that you can order [here](#). The kit will be free if
 - Order is received no later than Thursday 9/4 @ 4PM.
 - Order is picked up in person before Friday 9/5 @ 2PM
- Please keep your previously ordered lab kits from previous semesters! Breadboards, and wire kits will be reused in your subsequent labs so have them with you where you will be doing your coursework, be it home or campus. We will check orders against registration records and only provide these components to students who do not already have them.
- The last day to report missing parts will be Friday 9/19 (In Person Only - We will not ship missing components).
- To order and to get more information on the kits, visit <https://ece.illinois.edu/academics/ugrad/lab-kits>

Five laboratory assignments will be given, beginning on September 24. You **do not need** to attend lab before then.

- Lab # 1 - Weeks of September 22/29.
- Lab # 2 - Weeks of October 6/13.
- Lab # 3 - Weeks of October 20/27.
- Lab # 4 - Weeks of November 3/10 - Complementary files are in [Canvas](#).
- Lab # 5 - Weeks of November 17/December 1.

Lab Times (September 24 - December 4) in room ECEB 4072:

Hrs.	Monday	Tuesday	Wednesday	Thursday
10-11.50am				Week 1: Section AB7 Week 2: Section AB8 Steven TKolaczkowski/Daniel Vanwiggeren ECEB 4072
12-1.50pm			Week 1: Section AB1 Week 2: Section AB2 Daniel Vanwiggeren/Yulun ECEB 4072	Week 1: Section AB9 Week 2: Section ABA Steven TKolaczkowski/Prithvi Ulaganathan ECEB 4072
2-3pm			Week 1: Section AB3 Week 2: Section AB4 Kevin Chen/Daniel Vanwiggeren ECEB 4072	Week 1: Section ABB Week 2: Section ABC Nick Xing/Prithvi Ulaganathan ECEB 4072
3-3.50pm	Open lab Kevin Chen ECEB 4072	Open lab Yichi Zhang ECEB 4072		
4-5pm	Open lab Kevin Chen ECEB 4072	Open lab Yichi Zhang ECEB 4072	Week 1: Section AB5 Week 2: Section AB6 Yichi Zhang/Nick Xing ECEB 4072	
5-5.50pm				

Each section meets every other week for 5 lab sessions. Here are the dates for the first lab of each section:

- AB1: Wednesday, September 24
- AB2: Wednesday, October 1
- AB3: Wednesday, September 24
- AB4: Wednesday, October 1
- AB5: Wednesday, September 24
- AB6: Wednesday, October 1

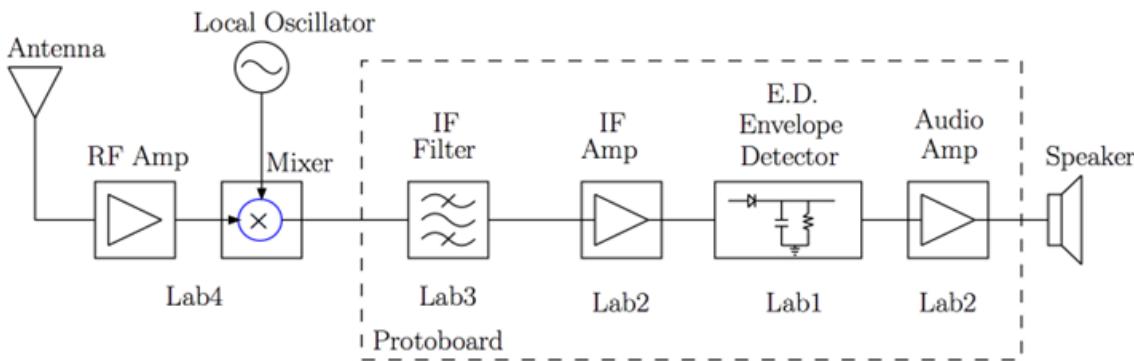
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About the Laboratory:

This lab is designed to give the student the opportunity to verify theoretical concepts introduced in lecture (such as frequency response, filtering, modulation, etc.) and to understand how these concepts relate to real-world systems. It does so by leading the student through the design of a simple AM radio receiver and allowing the student to get hands-on experience with equipment common to any electronics laboratory.

In the figure below we can see each of the subsystems that are part of the AM radio receiver. Each of the subsystems will be built during lab time. In this diagram it is indicated the corresponding lab associated to each component. (e.g. the envelope detector will be built during lab #1, while the IF and the Audio amplifiers will be built during lab #2). Further instructions will be provided in each lab printout.



Lab session policy:

- Attendance is mandatory; in case of absence ZERO CREDIT will be given for that lab assignment.
- Students arriving more than 10 minutes late for a laboratory session will be discounted 20% from total grade of that lab.
- In case of illness or any other officially approved reason notify your TA ahead of time and make arrangements to work in the lab at another time. You will have to provide documentation of this fact to your TA (e.g., a note from your doctor).
- Labs take priority over exam conflicts with other courses so apply for the other course's conflict exam.
- Basic rules of courtesy must be followed when in the lab.
- Do not remove any lab equipment from the lab at any time.
- Do not bring food or drink into the lab.
- Open lab:** Open Lab hour is not meant to be an extension of regular lab hours. Open Lab hour is dedicated for students who HAVE NOT completed the lab and need additional help and time. Students who have to attend the open lab have to collect BOTH the signature from their TA in the regular section (for approval) and the signature from the open lab TA (for accomplishment) in order to receive full credit.

Lab/prelab report submission policy:

- The prelabs are due by 9am on Wednesdays of the week you have your lab session.
Late pre-labs will be accepted up to 1 hour after the deadline with a deduction of 10% of the points (no negative final score), so please mark your calendar with the deadlines to avoid losing points. Do not wait until the last minute to submit it and then run into internet issues because we will not give you an extension. Submit your pre-labs as soon as you finish them because if you wait and forget to do it on time, we will not give you an extension.
- The lab reports are due by 11.59pm on Tuesdays of the week after you have your lab session.
Late labs will be accepted up to 8 hours after the deadline with a deduction of 10% of the points (no negative final score), so please mark your calendar with the deadlines to avoid losing points. Do not wait until the last minute to submit it and then run into internet issues because we will not give you an extension. Submit your labs as soon as you finish them because if you wait and forget to do it on time, we will not give you an extension.
- You **must** use the provided pdf. If more space is needed for some answers, you may attach additional pages, but you must indicate that in the main page for that answer,
- Pre-labs and labs will be submitted via [Gradescope](#)
- Make sure that your labs and pre-labs are neat enough to read. Graders has the flexibility to deduct points for lack of neatness. Graders should not have to guess what you wrote and where in the page you wrote it. An easy to follow solution is required.
- Any requests for missing grades, re-grades, etc. should be sent to one of your lab TAs.
- Labs constitute an essential component of your learning experience. Investing time to do your labs with care will pay off.
 - You will be expected to provide detailed explanations of your solutions in order to obtain credit in your labs and pre-labs. Graders should not have to guess or make assumptions about why you are using a certain equation, etc. Conversely, solutions lacking full

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opened against you with sanctions ranging from a letter grade reduction to an F in the course.

- Please keep these cautionary remarks in mind as you are working out your assignments and avoid submitting unsubstantiated solutions to avoid any misinterpretations

[Code Guide](#) Resistors are color coded in ohms, inductors in microH, and capacitors (with digits) in picoF.

User's Manuals:

- [HP 33120A Function/Arbitrary Waveform Generator](#)
- [Agilent 34401A Multimeter](#)

Radio Stations:

[Tool for finding Radio Stations by the Federal Communications Commission\(FCC\)](#)

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OFFICE HOURS

Course staff will **not** give you the answers **nor** check if your answer is correct. Course staff will help you see if your approach is correct/incorrect, and guide you accordingly.

Faculty and TA Office Hours (August 27 - Dec 10, except September 1 and November 24-28):

Open office hours.

Small study sessions (until seats are filled). More information below the table.

Hrs.	Monday except Sept 1, Nov 24	Tuesday except Nov 25	Wednesday except Nov 26	Thursday except Nov 27	Friday except Nov 28
9-9.50am			Steven TKolaczkowski ECEB 3036	Daniel Vanwiggeren ECEB 3034	Steven TKolaczkowski ECEB 3036
10-10.50am				Juan Alvarez ECEB 3034	
11am-11.50am				Kevin Chen ECEB 3034	
12-12.50pm				Yichi Zhang ECEB 3034	

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3-3.50pm			Victoria Shao ECEB 3036		Prithvi Ulaganathan ECEB 3036
4-4.50pm	Craig Shultz Daniel Vanwiggeren ECEB 3017	Nick Xing Daniel Vanwiggeren ECEB 3017	Olga Mironenko ECEB 3036		Prithvi Ulaganathan ECEB 3036
5-5.50pm	Kevin Chen Yulun Wu ECEB 3017	Nick Xing Yulun Wu ECEB 3017			
6-6.50pm	Kevin Chen Nick Xing ECEB 3017	Nick Xing Prithvi Ulaganathan ECEB 3017			

Small study session office hours

- We have small study sessions with course staff members to better support you by answering conceptual questions, provide additional examples, etc.
- These sessions will be available on Wednesdays, Thursdays and Fridays and only the first 8 students to get there will get a seat.
- If you do not have specific questions, but you want to get some practice and help at the same time, you can ask the staff member to provide some examples to practice or use [these handouts](#).

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COURSE STAFF

Instructors:

- [Juan Alvarez](#)
- [Olga Mironenko](#)
- [Victoria Shao](#)
- [Craig Shultz](#)

TA's:

- [Kevin Chen](#)
- [Steven TKolaczkowski](#)
- [Prithvi Ulaganathan](#)
- [Daniel Vanwiggeren](#)
- [Yulun Wu](#)
- [Nicholas Xing](#)
- [Yichi Zhang](#)

Communication: It is the student's responsibility to attend lectures and check their email daily, in case there are announcements from course staff. Missing a lecture and/or not checking your email will not excuse complying with course deadlines and policies.

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HONORS

There will be no honors section this Fall 2025.

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ASSIGNED READINGS

You will be expected to read the textbook in preparation for lectures. The table below indicates the schedule for the topics.

Monday	Tuesday	Wednesday	Thursday	Friday
Aug. 25 Introduction & voltage, current power, KVL, KCL 0, 1.1-2	Aug. 26 Elements, sources, solutions of circuit problems, 1.3	Aug. 27 Complex numbers review 1.4, App. A, Resistor combinations 2.1	Aug. 28	Aug. 29 Source combinations, node voltage method 2.1-2
Sept. 1 Labor day NO CLASS	Sep. 2 Node voltage method 2.2	Sep. 3 Loop current method 2.3	Sep. 4	Sep. 5 Linearity & superposition 2.4
Sept. 8 Thevenin & Norton 2.4	Sept. 9 Available power & max power transfer 2.5	Sept. 10 Op-amps & ideal op-amp approximations 3.1	Sept. 11 Quiz I starts	Sept. 12 Linear op-amp ckts 3.1
Sept. 15 Differentiators & integrators 3.2	Sept. 16 Introduction to LTI systems 3.3	Sept. 17 1st order RC ckt response to constant inputs 3.4.1	Sept. 18	Sept. 19 RC & RL ckts with constant inputs 3.4.1-2
Sept. 22 RC & RL ckts with time-varying inputs 3.4.3	Sept. 23 Transient & steady-state response in LTI systems 3.4.3, 3.5	Sept. 24 NO CLASS Midterm Exam I	Sept. 25	Sept. 26 Phasors & sinusoidal SS solutions of linear ODEs 4.1.1-2
Lab 1				
Sept. 29 Impedance & phasors in sinusoidal steady state ckts 4.1.3, 4.2.1	Sept. 30 Phasor ckt analysis 4.2.2-3	Oct. 1 Post-review of Exam I	Oct. 2	Oct. 3 Avg and available power 4.3
Oct. 6 Resonance 4.4	Oct. 7 Frequency response of dissipative LTI systems 5.1-2	Oct. 8 LTI system response to co-sinusoids & multi-frequency inputs 5.3-5	Oct. 9 Quiz 2 starts	Oct. 10 Periodic signals 6.1
Oct. 13 Fourier series & its forms 6.2	Oct. 14 Fourier series examples 6.2	Oct. 15 LTI system response to periodic inputs 6.3.1	Oct. 16	Oct. 17 Avg signal power, Parseval's thm, harmonic distortion 6.3.2-3 Last day for ECE 211
Oct. 20 Fourier transform of aperiodic signals 7.1	Oct. 21 Fourier transform pairs and properties of FT 7.1	Oct. 22 NO CLASS Midterm Exam II	Oct. 23	Oct. 24 Signal energy and bandwidth 7.2
Lab 3				
Oct. 27 LTI system response using FT 7.3	Oct. 28 Modulation property, AM signal, coherent	Oct. 29 Post-review of Exam II	Oct. 30	Oct. 31 Envelope detection, superhet AM receiver 8.3-4

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Nov. 10 FT of power signals 9.2-3	Nov. 11 Sampling & analog signal reconstruction 9.4	Nov. 12 Impulse response & BIBO stability 10.1-2	Nov. 13	Nov. 14 Causality & LTIC systems 10.3-5
Nov. 17 Transfer function & Laplace transform 11.1	Nov. 18 Properties of Laplace Transform 11.1	Nov. 19 Inverse Laplace transform & PFE 11.2	Nov. 20	Nov. 21 NO CLASS
Lab 5		Midterm Exam III		
Nov. 24 Thanksgiving break NO CLASS	Nov. 25 Thanksgiving break NO CLASS	Nov. 26 Thanksgiving break NO CLASS	Nov. 27 Thanksgiving break NO CLASS	Nov. 28 Thanksgiving break NO CLASS
Dec. 1 Inverse Laplace transform & PFE 11.2	Dec. 2 s-domain ckt analysis, general response of LTIC systems 11.3, 11.4.1	Dec. 3 Post-review of Exam III	Dec. 4	Dec. 5 Zero-input response in LTIC ckts & systems 11.4.1-2
Dec. 8 Ckt initial value problems 11.4.3	Dec. 9 LTIC system combinations 11.5	Dec. 10 Review	Dec. 11 Reading Day	Dec. 12

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ADDITIONAL RESOURCES

- [Additional references/notes](#)
- [Anti-Racism and Inclusivity Statement](#)
- [Registration deadlines, add/drop course deadlines, advising schedules, and finals](#)
- [Academic integrity](#)
- [Inclusivity](#)
- [Disability Resources and Educational Services \(DRES\)](#)
- [FERPA](#)
- [Sexual misconduct](#)
- [Support Resources and Supporting Fellow Students in Distress](#)
- [Run, hide, fight](#)
- [Other campus resources](#)

Anti-Racism and Inclusivity Statement

We in the Illinois ECE community are committed to understanding, empathizing with, and respecting each other, embracing the many differences among us.

- The Grainger College of Engineering is committed to the creation of an anti-racist, inclusive community that welcomes diversity along a number of dimensions, including, but not limited to, race, ethnicity and national origins, gender and gender identity, sexuality, disability status, class, age, or religious beliefs. The College recognizes that we are learning together in the midst of the Black Lives Matter movement, that Black, Hispanic, and Indigenous voices and contributions have largely either been excluded from, or not

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Resources (<https://diversity.illinois.edu/diversity-campus-culture/belonging-resources/>). Based on your report, members of the Office of the Vice Chancellor for Diversity, Equity & Inclusion staff will follow up and reach out to students to make sure they have the support they need to be healthy and safe. If the reported behavior also violates university policy, staff in the Office for Student Conflict Resolution may respond as well and will take appropriate action.

Academic integrity

The University of Illinois at Urbana-Champaign Student Code should be very important for you to know.

Students should pay particular attention to [Article 1, Part 4: Academic Integrity](#). Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policy. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor(s) if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

Inclusivity

The effectiveness of this course is dependent upon the creation of an encouraging and safe classroom environment. Exclusionary, offensive or harmful speech (such as racism, sexism, homophobia, transphobia, etc.) will not be tolerated and in some cases subject to University harassment procedures. We are all responsible for creating a positive and safe environment that allows all students equal respect and comfort. I expect each of you to help establish and maintain an environment where you and your peers can contribute without fear of ridicule or intolerance or offensive language.

Disability Resources and Educational Services (DRES)

Students with documented disabilities must notify the instructor within the first 7 days of classes.

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resources and Educational Services (DRES) as soon as possible.

To contact DRES, you may visit 1207 S. Oak St., Champaign, call 333-4603, e-mail disability@illinois.edu or go to the [DRES website](#).

If you are concerned you have a disability-related condition that is impacting your academic progress, there are academic screening appointments available on campus that can help diagnose a previously undiagnosed disability by visiting the DRES website and selecting "Sign-Up for an Academic Screening" at the bottom of the page.

FERPA

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Sexual misconduct

The University of Illinois is committed to combating sexual misconduct. Faculty and staff members are required to report any instances of sexual misconduct to the University's Title IX and Disability Office. In turn, an individual with the Title IX and Disability Office will provide information about rights and options, including accommodations, support services, the campus disciplinary process, and law enforcement options. A list of the designated University employees who, as counselors, confidential advisors, and medical professionals, do not have this reporting responsibility and can maintain confidentiality, can be found [here](#). Other information about resources and reporting is available [here](#).

Support Resources and Supporting Fellow Students in Distress

As members of the Illinois community, we each have a responsibility to express care and concern for one another. If you come across a classmate whose behavior concerns you, whether in regards to their well-being or yours, we encourage you to refer this behavior to the Student Assistance Center (1-217-333-0050) or [online](#). Based upon your report, staff in the Student Assistance Center reaches out to students to make sure they have the support they need to be healthy and safe. Further, as a Community of Care, we want to support you in your overall wellness. We know that students sometimes face challenges that can impact academic performance (examples include mental health concerns, food insecurity, homelessness, personal emergencies). Should you find that you are managing such a challenge and that it is interfering with your coursework, you are encouraged to contact the Student Assistance Center (SAC) in the Office of the Dean of Students for support and referrals to campus and/or community resources. The SAC has a Dean on Duty available to see students who walk in, call, or email the office during business hours. For mental health emergencies, you can call 911 or contact the Counseling Center.

Run, hide, fight.

Emergencies can happen anywhere and at any time. It is important that we take a minute to prepare for a situation in which our safety or even our lives could depend on our ability to react quickly. When we're faced with almost any kind of emergency – like severe weather or if someone is trying to hurt you – we have three options: Run, hide or fight.

[Run, hide, fight video.](#)



Run

Leaving the area quickly is the best option if it is safe to do so.

- Take time now to learn the different ways to leave your building.
- Leave personal items behind.
- Assist those who need help, but consider whether doing so puts yourself at risk.
- Alert authorities of the emergency when it is safe to do so.



Hide

When you can't or don't want to run, take shelter indoors.

- Take time now to learn different ways to seek shelter in your building.
- If severe weather is imminent, go to the nearest indoor storm refuge area.
- If someone is trying to hurt you and you can't evacuate, get to a place where you can't be seen, lock or barricade your area if possible, silence your phone, don't make any noise and don't come out until you receive an Illini-Alert indicating it is safe to do so.

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Please be aware of people with disabilities who may need additional assistance in emergency situations

Other resources

- police.illinois.edu/safe for more information on how to prepare for emergencies, including how to run, hide or fight and building floor plans that can show you safe areas.
- emergency.illinois.edu to sign up for Illini-Alert text messages.
- Follow the University of Illinois Police Department on Twitter and Facebook to get regular updates about campus safety.