Course Information

Course title:	ECEN 214: Electrical Circuit Theory This syllabus applies for sections 200 and 501-505
Lecture time:	Spring 2022, MW 4:10-5:25 pm
Lecture location:	ZACH 341
Lab location:	ZACH 333 (Times vary, see sections below)
Course website:	https://birchfield.engr.tamu.edu/214s22
Prerequisites:	Grade of C or better in PHYS 207 or PHYS 208; grade of C or better in CHEM 107, CHEM 102, or CHEM 120; grade of C or better in MATH 308, or concurrent enrollment
Required textbook:	Electrical Circuit Theory (Zybook), Atkins, Sambamurthy, 2019, Zyante. Inc. To access a copy of the Zybook: (1) Sign in or create an account at learn.zybooks.com (2) Enter Zybook code: TAMUECEN214BirchfieldSpring2022 (3) Subscribe. A subscription is **$58**. Students may begin subscribing on Jan 04, 2022 and the subscriptions will last until June 30, 2022.
Catalog description:	Resistive circuits including circuit laws, network reduction, nodal analysis, mesh analysis; energy storage elements; sinusoidal steady state; AC energy systems; magnetically coupled circuits; the ideal transformer; resonance; introduction to computer applications in circuit analysis.
Syllabus version:	1/17/2022
Instructor:	Prof. Adam Birchfield, abirchfield@tamu.edu
Office hours:	Monday 1:00 – 4:00 pm, WEB 215-E, or by request
Website:	https://birchfield.engr.tamu.edu/
Lab times:	Section 200: Wed 11:30 am – 2:20 pm Section 501: Mon 8:00 am – 10:50 am Section 502: Tue 8:00 am – 10:50 am Section 503: Tue 8:00 am – 10:50 am Section 504: Tue 11:10 am – 2:00 pm Section 505: Tue 11:10 am – 2:00 pm

TAs: Tamal Kanti Das, tamal_7922@tamu.edu (Section 201 and 502)
Javed Ali, jali1@tamu.edu (Section 501 and 503)
Nicholas Jeon, jhgee66@tamu.edu (Section 504)
Wenjing Chen, jj9754@tamu.edu (Section 505)

Evaluation

30%	Class participation and practice	
	5%	Participation
	5%	Preparation (Zybook)
	10%	Homework (Canvas)
	10%	Quizzes (In class)
20%	Labs	
30%	In-class exams (3 at 10% each)	
20%	Final Exam	

If your final average falls within the following ranges you are guaranteed to receive at least the letter grade indicated: A: 90-100; B: 80-89; C: 70-79; D: 60-69; F: 59 or lower.

Participation

This class will involve in-class discussions and exercises to reinforce the material. Students are expected to participate actively in class. For the lectures in ZACH 341, you will sit with your lab section according to a classroom map that will be posted to the website. Where each lab section sits will rotate throughout the semester. The purpose of this seating arrangement is to encourage students to work together with their lab sections and to encourage class discussion with all students throughout the semester.

As part of the participation grade, students must meet with the instructor in office hours at least twice in the semester: once in January or February and once in March or April. The meeting does not need to be very long. You should bring one technical question to the meeting. You may come individually or in groups up to 5. If you are not able to attend the instructor's office hours, you can make an appointment for a different time. Meeting more often with the instructor and TAs is encouraged.

Preparation

There will be weekly reading assignments on the Zybook website. These assignments will prepare you for class discussions and in-class exercises. The assignments will generally be due before class starts on Monday (usually 4pm on Mondays). After the deadline, the instructor will get a report of students who have completed the reading and associated exercises.

Homework

Homework will be assigned through Canvas. (https://canvas.tamu.edu) If you need help with the problems, you are encouraged to reach out to the instructor, your lab TA, or one of the peer tutors in the Texas A&M Academic Success Center. For additional practice, you can work the homework problems again, or any of the problems in the course textbook (Zybook) at the end of each section.

Quizzes

There will frequently be short (10 minute) quizzes at the beginning of class to reinforce the material from recent homework and lectures. The quizzes are closed book and notes, but you may use a standard calculator.

Labs

For the lab, we will be using the Analog Discovery 2 units. This is a product developed by National Instruments and currently marketed by Digilent that allows your laptop to emulate all of the equipment we use in the lab (digital multi-meter, power supply, signal generator, oscilloscope). Your TA will provide you with details on how to check out a unit. You will be required to return the unit at the end of the semester and will be held responsible for the cost of the unit if you do not return it in good working condition. For those who wish to, you are welcome to purchase your own unit to keep rather than checking one out from the department.

Exams

All exams are closed-book, closed-notes. You may use one hand-written notesheet (8.5" by 11", front and back) and standard calculators.

Tentative dates for hourly exams:
Exam 1 on Wednesday, Feb 16
Exam 2 on Wednesday, Mar 23
Exam 3 on Wednesday, Apr 20

Final exam date: Friday, May 6, 3:30pm - 5:30pm

Tentative Lab Schedule

Date	Lab	Assignments Due
Week of Jan 17	No lab activities	None
Week of Jan. 24	Meet with Lab TA during regular lab time	None
Week of Jan. 31	Lab 1 – Introduction to Electrical Measurements	Prelab 1
Week of Feb. 7	Lab 2 – Non-Ideal Sources	Report 1 Prelab 2
Week of Feb. 14	Practicum 1	
Week of Feb. 21	Lab 3 – Equivalent Networks and Superposition	Report 2 Prelab 3
Week of Feb. 28	Lab 4 – Op Amps / Security System Part 1	Report 3 Prelab 4
Week of Mar. 7	Lab 5 – Op Amps / Security System Part 2	Report 4 Prelab 5
Week of Mar. 14	Spring Break	None
Week of Mar. 21	Practicum 2	None
Week of Mar. 28	Lab 6 – Transient Response of 1st Order Circuits	Report 5 Prelab 6
Week of Apr. 4	Lab 7 – Transient Response of 2nd Order Circuits	Report 6 Prelab 7
Week of Apr. 11	Lab 8 – AC Steady State Response of 2nd Order Circuits	Report 7 Prelab 8
Week of Apr. 18	Practicum 3	None
Week of Apr. 25	Lab 9 – AC Power Transfer	Report 8 Prelab 9
Week of May 2	None	Report 9

University Policies

Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to Student Rule 7 in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to Student Rule 7 in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" (Student Rule 7, Section 7.4.1).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" (Student Rule 7, Section 7.4.2).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See Student Rule 24.)

Academic Integrity Statement and Policy

"An Aggie does not lie, cheat or steal, or tolerate those who do."

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" (Section 20.1.2.3, Student Rule 20).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu.

Americans with Disabilities Act (ADA) Policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or visit disability.tamu.edu. Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

Title IX and Statement on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see University Rule 08.01.01.M1):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, a person who is subjected to the alleged conduct will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with Counseling and Psychological Services (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's Title IX webpage.

Statement on Mental Health and Wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in healthy self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at suicidepreventionlifeline.org.