SCOTTSDALE COMMUNITY COLLEGE
A MARICOPA COMMUNITY COLLEGE

Syllabus

Course Information

- Semester and Year: Fall 2026
- Course Title: University Physics II: Electricity and Magnetism
- Course Prefix and Number: PHY131 Lec/Lab
- Section Number: 18109/18110
- Credit Hours: 4
- Start Date: 8/25/2026
- End Date: 12/18/2026
- Room Number: NS 404
- Meeting Days: Tuesdays and Thursdays
- Meeting Times: 12:30pm – 3:15pm
- Class Format: In-Person

Instructor Information

- Instructor: Andrew Chapman
- Email: andrew.chapman@scottsdalecc.edu
- Phone: 480-425-6959
- Office Location: NS 133
- Office Hours: MTWR 3:15-4:00PM and W 10:00AM-12:00PM (or by appointment)

Course Description

Electric charge and current, electric and magnetic fields in vacuum and in materials, and induction. AC circuits, displacement current, and electromagnetic waves.

Prerequisites and/or Corequisites

- Prerequisites: A grade of C or better in MAT230 or MAT231 or permission of Department or Division and PHY121.
- Corequisites: MAT241 or permission of Department or Division.

Course Competencies

1. Use fundamental physical laws and principles to solve problems encountered in academic and non-academic environments. (I-IV)
2. Develop and use models that closely represent actual physical situations. (I-IV)
3. Apply problem solving techniques in terms of logic, efficiency, and effectiveness. (I-IV)

4. Work effectively in collaborative groups. (I-IV)
5. Solve practical engineering and science problems. (I-IV)

General Education & Institutional Learning Outcomes

General Education and courses such as Physics 131 provide foundational learning experiences that contribute to academic and career success. It is reflected in Scottsdale Community College's Institutional Learning Outcomes: Arts & Humanities Awareness, Career Readiness, Critical Thinking and Problem Solving, Effective Communication, Information Literacy, and Social Responsibility. Students who take Physics 131 will learn how our search for understanding of the nature of our universe is integral to each of these six areas of learning outcomes.

Program Learning Outcomes

Credit-bearing courses at Scottsdale Community College can count toward the completion of a degree or certificate program. Each program has Program Learning Outcomes, which are learned assets that students can claim to have acquired by completing their academic or occupational program at SCC. Program Learning Outcomes can be found on the Degrees and Certificates page of the SCC Website. For each degree, look under "What You'll Learn."

This course is a General Education course that is foundational to many degree programs and a key component of the Arizona General Education Curriculum (AGEC) certificate program. This course fulfills a Physics requirement for the AGEC.

This course most directly applies to the Associate in Science, Emphasis in Physics program with the following Program Learning Outcomes:

- Communicate scientific ideas, both qualitatively and quantitatively, using an appropriate technical vocabulary.
- Collaborate with others from diverse backgrounds.
- Provide order of magnitude estimates for physical quantities in appropriate units.
- Describe, predict, and explain real-world phenomena, utilizing a variety of different representations, such as mathematical, graphical, and pictorial formalisms.
- Collect and analyze experimental data, and then draw reasonable conclusions to both develop and support the laws of Physics.
- Apply principles of Physics to solve problems both inside and outside the classroom.
- Transfer information and problem-solving methods from familiar to unfamiliar contexts.

Texts and Course Materials

- Recommended Text (opensource): Openstax: University Physics Volume 2
- Link: https://openstax.org/details/books/university-physics-volume-2
- ISBN-13: Color: 978-1-938168-16-1 Black and White: 978-1-50669-816-8
- Digital pdf ISBN-13: 978-1-947172-21-0
- Calculator: You will need a calculator with scientific capabilities (powers, trig functions, logarithms). A graphing calculator is preferred. Please bring this with you to EVERY class.
- Recommended: Laptop or Tablet (not required)

Course Policies

The following are policies specific to this course. Students are also responsible for the college policies included on the Student Regulations page of the Maricopa Community College District website.

Attendance Policy

You can miss 3 classes for "free" after that each class you miss will cost you a letter grade for the semester. More than 20 minutes late to class will count as an absence. Official absences don't apply to this. If you miss two classes in a row, I will contact you about why you missed class (if you don't let me know first). After 7 absences you will be dropped from the course for excessive absences.

Instructional Contact Hours and Minimum Course Expectations

Instructional contact hours are the weekly time students spend directly learning with their instructor or course activities. These activities include, but are not limited to, lectures, discussions, labs, group work, and viewing recordings. Instructional contact hours vary by course; refer to the MCCCD course bank for your course's details.

Minimum course expectations include the number of hours students are expected to spend outside of class (weekly) completing coursework. Students are encouraged to use the Time Management Calculator to help estimate their weekly time commitment for classes.

Course Technologies

View the Accessibility Statements & Privacy Policies of the technologies used in this course. The SCC Help Desk provides students with a primary point of contact within SCC for college-supported technology services and technical assistance.

Maricopa Systems

This course uses key Maricopa systems for course management and communication.

- Canvas Learning Management System
- Student Maricopa Gmail Account
- Maricopa Open Educational Resource Learning System (MOER)

Student Assignment Tools

This course requires students to participate in or submit assignments using desktop or cloud-based applications.

- Canvas
- Google Products
- Positivephysics.org, access is provided at no cost to the student
- Graphical Analysis - This app is available for free download on any operating system including phones, tablets, and laptops.

Exam Proctoring Tools

Will not be used in this class, all exams will be in-person in the classroom.

Generative Artificial Intelligence (AI) Policy

The World Economic Forum defines generative AI as “a category of artificial intelligence (AI) algorithms that generate new outputs based on the data they have been trained on. Unlike traditional AI systems that are designed to recognize patterns and make predictions, generative AI creates new content in the form of images, text, audio, and more.”

Some examples of generative AI tools include but are not limited to: ChatGPT, Google Gemini, Microsoft Copilot, Stable Diffusion, GrammarlyGo, and Adobe Firefly.

Some Generative Artificial Intelligence (AI) Allowed in Specific Circumstances

There are situations and contexts within this course where you may be permitted to use generative AI tools. In these cases, specific guidelines will be provided in the assignment details. If you are unsure if the tool or website you are using is a generative AI tool or if it is permitted on a specific assignment, please contact the instructor for further clarification before submitting your work.

Grading Standards and Practices

Your grade will be calculated based on 4 categories of assignments: **Summative Assessments (including a Final Project), Quizzes, Lab Work, and Reading/Practice.** Assignments will have point values attached to them and your percentage of the total points for the course will determine your overall grade (see above). A point is a point is a point, so all points count equally to your grade, but different assignments may have different amounts of points.

Grade Scale

Table 1 Course Grading Scale

Letter Grade	Points Range
A	90 – 100%
B	80 – 89%
C	70 – 79%
D	60 – 69%
F	0 – 59%

Assignment Points (Approximate)

Assignment Type	Points per assignment		Assignment Type	Points per week
Weekly Lab	20		**~15 Weekly Assignments**	50x15 = 750
Weekly Practice	10		**Summative Assessments**	250x3 = 750
Daily Quizzes	10 each		**Final Project**	250
Total points per week	50		**Total points per semester**	1750

Late work policy - Work submitted late will have a deduction taken off as follows:

- 0.00001 - 24 hours late – 25% off (with the exception of Quizzes – late quizzes are automatically 50% off as we go over them immediately)
- 24.00001 - 48 hours late – 50% off
- 48.00001 - 72 hours late – 75% off
- More than 72 hours late – 0 points

Tentative Course Schedule:

- Weeks 1-5 Electrostatics
- Weeks 6-10 Circuits
- Weeks 11-15 Magnetism
- Weeks 16-17 Final Project and Exam

Student/Instructor Interaction

In this course, you can expect regular and substantive interaction (RSI) that aligns with Scottsdale Community College's mission to provide challenging and supportive learning experiences and the US Department of Education's requirement for regular and substantive interaction (RSI) for online courses. My commitment to your success includes the following:

- Being available during regularly scheduled office hours as stated in the syllabus.
- Sharing weekly information about the course materials, including key information, explanations, examples, and resources via in-person, recorded, and/or text-based lectures.
- Engaging in weekly discussions about course content within discussion boards in Canvas, forums in MOER, or other discussion-based tools.
- Providing group or individual feedback regularly on assignments.
- Promptly responding to student questions about the course sent via email, MOER messaging, or the Canvas inbox.
- Regularly posting announcements about the course content and activities.
- Monitor your academic progress and communicate concerns, as needed.

Response Time

Students can expect a response time of 24-48 hours and possibly longer on weekends for the instructor to respond to messages sent via the Canvas Learning Management System or @maricopa.edu email. Students can expect assignments to be graded within one week of the assignment's due date.

Extensions for due dates are reserved for emergency situations - if you have something come up (family, etc.) please let me know and be able to provide some documentation. Hopefully that will never be needed, but because life happens I will drop your lowest score in each category.

Tutoring

SCC's tutors are available online to help with your courses. You may work with an SCC tutor remotely using Google Meet, your phone, or email. Visit the Tutoring & Learning Centers page for detailed information on the five learning centers' hours and procedures.

If you need to work with a tutor outside regular hours, online and hybrid students now have access to a 24/7 online tutoring service called Brainfuse. To access Brainfuse and begin working with a tutor, visit the SCC Online Tutoring Services Through Brainfuse page.

MCCCD Policies

MCCCD is committed to providing a safe, fair, and accessible environment for all students. This includes laws such as the ADA and Title IX, which protect against discrimination. These statements explain your rights, available support, and where to go for help or more information. Please review the following policies:

Classroom Accommodations for Students with Disabilities

In accordance with the Americans with Disabilities Act (ADA), the Maricopa County Community College District (MCCCD) and its associated colleges are committed to providing equitable access to learning opportunities to students with documented disabilities (e.g. physical, sensory, neurological, chronic illness, mental health, learning disabilities, or other health concerns). If you require accommodations for this course, please contact Disability Resources and Services (DRS) at your college.

Contact with DRS should be made as soon as possible to ensure academic needs are met in a reasonable time. Additional information can be found in the Non-Discrimination Statement and MCCCD Non-Discrimination Policies.

Addressing Incidents of Title IX Sexual Harassment

Students are responsible for the information contained in this syllabus, the Syllabus page in the Canvas course, and the College Policies & Student Services page located under SCC Student Resources in the Canvas course navigation menu. The instructor will notify students of any changes to course requirements or policies.