

PHYS:1702

Physics II

Spring 2020

Instructor: Professor Gregory Howes
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Office Hours: 1:30–2:30pm W, 9:00–11:00am Th, or by appointment
Department: Physics & Astronomy, 203 Van Allen Hall, Prof. Fred Skiff, Chair

Catalog Description: This calculus-based course is part of a four-semester sequence intended primarily for physics and astronomy majors and other physical science or engineering majors who seek an in-depth introduction to physics. This continuation of Physics I covers topics in fluid mechanics and electricity and magnetism, including Maxwells equations. Grades are determined by homework, midterm exams, a final exam, and performance in lab sessions. The three weekly lectures and one-hour discussion (problem solving) are given by the course instructor, and the weekly lab is conducted by a teaching assistant.

Lectures: Monday, Wednesday, and Friday 11:30am–12:20pm
70 Van Allen Hall

Discussion: Thursday 12:30–1:20pm
469 Van Allen Hall

Required Text: Halliday, Resnick, & Walker, *Fundamentals of Physics*, 11th edition, Volume II

Required Lab Text: University of Iowa, *Experiments in Electricity, Magnetism, & Light + Quantum Physics*, 2019–2020 Academic Year edition.

Clickers: The course will make extensive use of the Top Hat (www.tophat.com) classroom response system in class, required for every class lecture and discussion. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message. You can visit the Top Hat Success Center (success.tophat.com) to learn how to register for a Top Hat account and get you up and running on the system. Our Course Join Code is **095018**. Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (support@tophat.com), the in app support button, or by calling 1-888-663-5491.

Course Preparation: This is a 4 semester-hour course with lab. CLAS guidelines are that students should expect to spend two hours per semester-hour on study outside of class. This means 8 hours per week on homework, reading, and other course preparation.

Web Pages: <https://homepage.physics.uiowa.edu/~ghowes/teach/phys1702/index.html>
ICON: <http://icon.uiowa.edu/>

Exam Schedule:

Three Midterm Exams:	Wednesday, February 19, 2020, 11:30–12:20pm	Chaps 21–24
	Wednesday, March 25, 2020, 11:30–12:20pm	Chaps 25–28
	Wednesday, April 22, 2020, 11:30–12:20pm	Chaps 29–31
Final Exam:	To be determined	Chaps 21–33

Grading:

Homework:	15%
Labs:	15%
Midterm Exams:	15% each
Final Exam:	25%
Reading Quizzes:	extra credit (see below)

- Homework:** Weekly homework assignments are to be completed online using WileyPLUS, accessible through a link on our ICON course page, <https://uiowa.instructure.com/courses/135468>. With the exception of Homework #0, all assignments must be completed online by 11:00pm on the Thursday that they are due. Late homework will not be accepted. You are encouraged to work together in groups on the homework, but each student must calculate the solutions to his/her own questions and submit the answers on WileyPLUS. Any solutions not available on WileyPLUS will be available on the ICON course website the day following the due date.
- Labs:** The laboratory assignments are a key part of the course, to be held under the supervision of your teaching assistant, who will also grade the laboratory reports. Questions about laboratory grading should be directed to your TA. Eating and drinking in the laboratory is not allowed. Conflicts between laboratory meeting times and night exams offered in other classes are to be resolved by the student asking for a make-up exam for the conflicting night exam. University policy is that instructors *must* offer such a make-up exam and that regularly scheduled class time, including laboratory, takes precedence over night exams. Only 9 of 10 labs will be counted toward grading, however, there will be *no* make-up labs.
- Exams:** Three midterm exams will be held during regular class hours on the dates specified above. Exams will be closed book, but each student may bring a single, one-sided 8.5 by 11 inch formula sheet—*no words* may be written on the sheet, only formulas, and the formula sheet *must* be turned in with your exam. Midterm exams will cover the material specified above, and the final exam will be comprehensive. Exam solutions will be available on the ICON course website. There will be no make-ups for the one-hour exams except in truly extraordinary circumstances for which the student comes to the instructor *before* the exam to plan a make-up.
- Reading Quizzes:** Reading assignments must be completed *before* lecture. Completion of the reading is essential for the interactive learning method to be effective. During the semester, we will have 10 unannounced reading quizzes to be taken in class using Top Hat, intended to encourage reading and awareness of topics rather than in-depth understanding. The grades for the quizzes can only *help* your grade: at the end of the semester, you can improve your final exam grade (up to the maximum of 200 points) by your overall quiz percentage times 10 points. For example, if your final exam score is 150/200 and your quiz score is 80%, the final exam score used for grading would be: $150 + (80\% \times 10) = 158$.
- Absence Policy:** Attendance is encouraged but not required for all regular class meetings, but any opportunities for extra credit through class activities, such as reading quizzes, will not be made up for any reason in the event of absence. Attendance during scheduled exams is required and make-up exams will only be given if the student comes to the instructor with appropriate justification *before* the exam to plan a make-up. Justification required is either a completed UI Student Absence form, available from the Registrar's website at <http://www.registrar.uiowa.edu/>, or other statement regarding authorized activities signed by a responsible official.
- Physics Tutorials:** Teaching assistants are available for free tutoring in the TILE Commons Room, 310 Van Allen Hall, during posted hours. While you are strongly encouraged to seek help from the TAs and the instructor, do not expect them to do your homework for you.

The College of Liberal Arts and Sciences Teaching Policies and Resources

Absences and Attendance Students are responsible for attending class and for contributing to the learning environment of a course. Students are also responsible for knowing their course absence policies, which will vary by instructor. All absence policies, however, must uphold the UI policy related to student illness, mandatory religious obligations, including Holy Day obligations, unavoidable circumstances, or University authorized activities

(<https://clas.uiowa.edu/students/handbook/attendance-absences>).

Students may use this absence form to aid communication; the instructor will decide if the absence is excused or unexcused (<https://clas.uiowa.edu/sites/default/files/ABSENCE%20EXPLANATION%20FORM.pdf>).

Academic Integrity All undergraduates enrolled in courses offered by CLAS have, in essence, agreed to the College's Code of Academic Honesty. Misconduct is reported to the College, resulting in suspension or other sanctions, with sanctions communicated with the student through the UI email address

(<https://clas.uiowa.edu/students/handbook/academic-fraud-honor-code>).

Accommodations for Disabilities UI is committed to an educational experience that is accessible to all students. A student may request academic accommodations for a disability (such as mental health, attention, learning, vision, and physical or health-related condition) by registering with Student Disability Services (SDS). The student is then responsible for discussing specific accommodations with the instructor. More information is at <https://sds.studentlife.uiowa.edu/>.

Administrative Home of the Course The College of Liberal Arts and Sciences (CLAS) is the administrative home of this course and governs its add/drop deadlines, the second-grade-only option, and related policies. Other colleges may have different policies. CLAS policies may be found here: <https://clas.uiowa.edu/students/handbook>.

Communication and the Required Use of UI Email Students are responsible for official correspondences sent to the UI email address (uiowa.edu) and must use this address for all communication within UI (Operations Manual, III.15.2).

Complaints Students with a complaint about an academic issue should first visit with the instructor or course supervisor and then with the Chair of the department or program offering the course; students may next bring the issue to the College of Liberal Arts and Sciences. For more information, see

<https://clas.uiowa.edu/students/handbook/student-rights-responsibilities>.

Final Examination Policies The final exam schedule is announced around the fifth week of classes; students are responsible for knowing the date, time, and place of a final exam. Students should not make travel plans until knowing this information. No exams of any kind are allowed the week before finals. Visit

<https://registrar.uiowa.edu/final-examination-scheduling-policies>.

Nondiscrimination in the Classroom UI is committed to making the classroom a respectful and inclusive space for all people irrespective of their gender, sexual, racial, religious or other identities. Toward this goal, students are invited to optionally share their preferred names and pronouns with their instructors and classmates. The University of Iowa prohibits discrimination and harassment against individuals on the basis of race, class, gender, sexual orientation, national origin, and other identity categories set forth in the University's Human Rights policy. For more information, contact the Office of Equal Opportunity and Diversity (diversity.uiowa.edu).

Sexual Harassment Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community must uphold the UI mission and contribute to a safe environment that enhances learning. Incidents of sexual harassment must be reported immediately. For assistance, please see <https://osmrc.uiowa.edu/>.

Week	Lab	Class Meeting	Date	Reading	HW/Exam/Review
1	No Lab	1	1/22	Chap. 21, Sec. 1–3, p. 609–622	HW 0 due 1/24, 11:00am
		2	1/24	Chap. 22, Sec. 1–2, p. 630–635	
2	E1	3	1/27	Chap. 22, Sec. 3–5, p. 635–644	HW 1 due 1/30, 11:00pm
		4	1/29	Chap. 22, Sec. 6–7, p. 645–651	
		5	1/31	Chap. 23, Sec. 1–2, p. 659–667	
3	E2	6	2/3	Chap. 23, Sec. 3–6, p. 668–677	HW 2 due 2/6, 11:00pm
		7	2/5	Chap. 24, Sec. 1–2, p. 685–693	
		8	2/7	Chap. 24, Sec. 3–6, p. 694–702	
4	E3	9	2/10	Chap. 24, Sec. 7–8, p. 703–708	HW 3 due 2/13, 11:00pm
		10	2/12	Chap. 25, Sec. 1–2, p. 717–723	
		11	2/14	Chap. 25, Sec. 3–4, p. 723–730	
5	Exam 1 Review	12	2/17	Chap. 25, Sec. 5–6, p. 731–738	Exam 1
		13	2/19	None	
		14	2/21	Chap. 26, Sec. 1–3, p. 745–756	
6	E4	15	2/24	Chap. 26, Sec. 4–5, p. 756–764	HW 4 due 2/27, 11:00pm
		16	2/26	Chap. 27, Sec. 1, p. 771–780	
		17	2/28	Chap. 27, Sec. 2–4, p. 781–793	
7	E5	18	3/2	Chap. 28, Sec. 1–2, p. 803–810	HW 5 due 3/5, 11:00pm
		19	3/4	Chap. 28, Sec. 3–4, p. 810–817	
		20	3/6	Chap. 28, Sec. 5–8, p. 817–827	
8	E6.5	21	3/9	None	HW 6 due 3/12, 11:00pm
		22	3/11	Chap. 29, Sec. 1–2, p. 836–843	
		23	3/13	Chap. 29, Sec. 3–4, p. 844–851	
Spring Break					
9	Exam 2 Review	24	3/23	Chap. 29, Sec. 5, p. 851–854	Exam 2
		25	3/25	None	
		26	3/27	Chap. 30, Sec. 1, p. 864–871	
10	E9	27	3/30	Chap. 30, Sec. 2–3, p. 871–879	HW 7 due 4/2, 11:00pm
		28	4/1	Chap. 30, Sec. 4–6, p. 879–886	
		29	4/3	Chap. 30, Sec. 7–9, p. 887–893	
11	E8	30	4/6	Chap. 31, Sec. 1, p. 903–910	HW 8 due 4/9, 11:00pm
		31	4/8	Chap. 31, Sec. 2–3, p. 910–920	
		32	4/10	Chap. 31, Sec. 4, p. 921–926	
12	OS1	33	4/13	Chap. 31, Sec. 5–6, p. 927–934	HW 9 due 4/16, 11:00pm
		34	4/15	Chap. 32, Sec. 1–2, p. 941–946	
		35	4/17	Chap. 32, Sec. 3–4, p. 946–952	
13	Exam 3 Review	36	4/20	Chap. 32, Sec. 5–6, p. 952–958	Exam 3
		37	4/22	None	
		38	4/24	Chap. 32, Sec. 7–8, p. 959–965	
14	E11	39	4/27	Chap. 33, Sec. 1, p. 972–980	HW 10 due 4/30, 11:00pm
		40	4/29	Chap. 33, Sec. 2–3, p. 980–985	
		41	5/1	Chap. 33, Sec. 4–5, p. 985–996	
15	No Lab	42	5/4	Chap. 33, Sec. 6–7, p. 996–999	HW 11 due 5/7, 11:00pm Final Exam Review
		43	5/6	None	
		44	5/8	None	