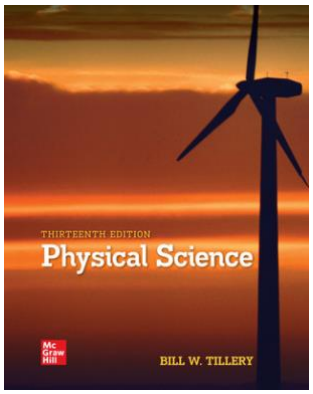
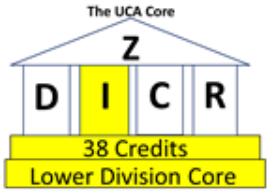


INSTRUCTOR: NJ GETSON	EMAIL: NJGETSON@UCA.EDU	PHONE: 501.450.5910
OFFICE HOURS: LSC 014	DAYS: MONDAY/WEDNESDAY	TIME: 9:00–10:00AM
OFFICE HOURS: ONLINE	DAYS: TUE/FRI VIA ZOOM	TIME: 11:00AM–12:00PM
LECTURE: ONLINE/ASYNCHRONOUS	VIDEOS: ON BLACKBOARD	VIDEOS: ON YOUTUBE
LAB: ONLINE/ASYNCHRONOUS	SIMS: PHYSICSCLASSROOM.COM	DUE: TH <DATE>, 6:00PM
UNIT EXAMS: FOUR 2-CHAPTER TESTS	RELEASE: <DATE>, 8:00AM	DUE: <DATE>, 6:00PM
TEXTBOOK: *PHYSICAL SCIENCE*; TILLERY, 13TH EDITION; ISBN-13: 978-1-2644-5073-2		
NECESSARY ITEMS: SCIENTIFIC CALCULATOR; INTERNET ACCESS; ACCESS TO BLACKBOARD AND COURSE WEB		

PHYS 1400: Physical Science (CRN 33101 and 33102) Spring 2024

Objectives

This course is part of the Critical Inquiry component of the Lower-Division Core. Critical Inquiry courses promote the ability to analyze new problems and situations to formulate informed opinions and conclusions. For more information, go to http://uca.edu/core.



You will also achieve a unique skill set that comes from studying the natural sciences. Students should be able to

- understand what the realm of science is and why science is essential to their lives;
- understand current principles and theories used to explain natural phenomena and to understand the role of theories in science;
- do science as a process by conducting systematic observations, formulating and testing hypotheses, recognizing sources of error and uncertainty in experimental methods, and disseminating results;
- make informed judgments about science-related topics and policies.

Course Materials

I have prepared some ancillary course materials to assist your comprehension of the textbook. There are chapter outlines, as well as the slides used for lecture, and you can download these in .pdf format.

All course materials are available via multiple channels: the course web (faculty.uca.edu/njaustin/PHYS1400), a shared Google drive, and Blackboard. The external links are also available in Blackboard.

The course web is valuable because it does not require a log-in; you can access it from anywhere, and unlike Blackboard, it does not go down for maintenance right when you need it the most. It contains links to the course materials but also much more detailed instructions than contained here.

There is triple-redundancy for storing and accessing course materials. You should never be unable to find what you need. However, not all of the course materials are available yet. You will always be notified when new documents go live. If, at any point, you find a broken link on the course web or suspect that I have not uploaded something I told you I have, please contact me. *Please always let me know if you cannot access something*.

Attendance

There is no mandatory attendance policy. You are very much encouraged to participate by attending live office hours, jumping into the Blackboard discussion threads, and scheduling one-on-one meetings with me when you need them.

Lecture

Lectures will be asynchronous, meaning that the pre-recorded lectures are available for you to access whenever you choose. You must be responsible for viewing the material, and lecture videos are available on Blackboard or YouTube.

Case Studies

In lieu of weekly homework, you will be participating in four Case Study group exercises. You will be permitted to self-select your team partners, and each team partner will receive the same score for the exercise. If you don't choose your own group, I will assign you to a group. You are not required to work with the same people on each case; these are short-term teams, and you can work with different people on each case if you choose to. However, once teams are formed for a specific case, those teams will remain in place for the duration of the assignment.

Each Case Study is a deeper dive into to specific topics from the chapters we are covering, framed in a relevant (and hopefully interesting) context. Each case is self-contained, and can be completed using the online resources and references provided within the case. You will have a combination of conceptual ideas to think about and some quantitative problems to work through.

You should expect completing each exercise to take about the same time as a lab, maybe a little longer. Your group should budget about two hours to work through a case (more if you're working with friends, because you know you'll end up off-topic at some point!).

Detailed instructions for preparing and submitting the case studies are located on the course web and in Blackboard. Please read those instructions carefully; do not lose points because you didn't follow the directions!

Lab Sims

All of our labs are virtual. However, even though we can't get our literal hands on the literal equipment to make literal measurements, we still have some excellent options.

I have prepared a set of Sims to complement the topics we will be covering. They utilize Physics Interactives at the physicsclassroom.com website, and the interactive

simulations run in a browser window and work on your phone.

Each Sim has a corresponding assessment quiz. You will complete and submit your work using the provided secure google form for each Sim. Typically, there will be one Sim per week.

A total of eleven Sims are available, and ten will count toward your grade. If something happens and you miss one week's Sim, you can still make a complete set of ten scores. At the end of the semester, if I have more than ten scores recorded, I will drop your lowest score and retain only the ten highest scores.

Lab Sims will be due at 6:00 PM on Thursdays. It is extremely unlikely that any of the Sims will require 75 minutes to complete, but do not wait until 5:45 PM on Thursday to start working on it!

Because you know what will happen. Your phone will die. The WiFi will crash. Aliens will land on the moon. All the usual catastrophes. *And late lab Sims will not be accepted without a well-documented reason*.

Unit Exams

Four unit exams are scheduled during the semester. Exams will be predominantly conceptual, with approximately 10–15% quantitative problem-solving.

Exams will be made at available 8:00 AM on the dates listed on the course calendar. The completed exam must be submitted no later than 6:00 PM on that same day, except for Exam 04, which adheres to the UCA-assigned final exam schedule.

Exams must be submitted using the secure Google form provided. No exceptions will be made to this policy. You will be permitted one re-submit within this time frame, and this should prevent the panic that occurs if something glitches and the form does not submit properly or if you notice after submitting that you were logged in as someone else. No late exams will be accepted.

Points and Grades

Points for the semester break down as follows:

UNIT EXAMS	4 exams @ 125 points each	500	50%
CASE STUDIES	4 cases @ 50 points each	200	20%
LAB SIMS	10 sims @ 30 points each	300	30%
	TOTAL	1000	100%

The grading scale is as follows:

LETTER GRADE	MINIMUM POINTS	MAXIMUM POINTS
A	895	1000
B	795	894
C	695	794
D	600	694
F	0	599

Your scores and overall average will always be available on Blackboard. I also maintain an offline Excel-based spreadsheet gradebook as a backup.

Academic Integrity

The University of Central Arkansas affirms its commitment to academic integrity and expects all members of the university community to accept shared responsibility for maintaining academic integrity. Students in this course are subject to the provisions of the university's Academic Integrity Policy, approved by the Board of Trustees as Board Policy No. 709 on February 10, 2010, and published in the Student Handbook. Penalties for academic misconduct in this course may include a failing grade on an assignment, a failing grade in the course, or any other course-related sanction the instructor determines to be appropriate. Continued enrollment in this course affirms a student's acceptance of this university policy.

It is also a matter of academic and personal integrity to take responsibility for withdrawing yourself from this course if the situation requires it. The last day for unrestricted withdrawal with a W is 04/08/24. Only W grades may be assigned through the 12th week of the Fall/Spring semester. After this date, only grades of A, B, C, D, or F will be allowed.

Student Evaluations

The Student Course Experience Survey is a crucial element in helping faculty achieve excellence in the classroom and the institution in demonstrating that students are gaining knowledge. Students may complete surveys for courses they are taking starting on Monday, April 15th, through the Sunday, May 5th after finals week by logging in to myUCA and clicking on the Course Evaluations task.

Title IX Disclosure

If a student discloses an act of sexual harassment, discrimination, assault, or other sexual misconduct to a faculty member (as it relates to "student-on-student" or "employee-on-student"), the faculty member is encouraged to report the act to the Title IX coordinator, deputy coordinator, or employee with the authority to institute corrective measures on behalf of the University. An investigation of a formal complaint of Title IX Sexual Harassment will only be initiated when the Complainant (individual who suffers actual harm from the violation of the Title IX Sexual Harassment Policy) or the Title IX Coordinator signs a complaint. For further information, please visit: https://uca.edu/titleix.

*Disclosure of sexual misconduct by a third party who is not a student and/or employee is also required if the misconduct occurs when the third party is a participant in a university-sponsored program, event, or activity.

Americans With Disabilities Act

The University of Central Arkansas adheres to the requirements of the Americans with Disabilities Act. If you need an accommodation under this Act due to a disability, please contact the Office of Accessibility Resources and Services (OARS), 501.450.3613.

Disclaimer

Assignments, point distributions, grading scales, and course policies should be regarded as flexible and subject to substitution or change at the instructor's discretion. Students should refer to the 2023–24 Student Handbook and familiarize themselves with all policies, particularly the Sexual Harassment Policy and Academic Policies.

All students are expected to comply with the UCA policy regarding face coverings (see https://uca.edu/coronavirus/students/).

Tentative Course Calendar

WEEK	MONDAY	WEDNESDAY	THURSDAY	FRIDAY
JAN 08–12			Introduction: Syllabus, Course Policies	Chapter 1.1–1.2
JAN 15–19	MLK Day! No Class!	Chapter 1.3–1.4 DUE: Syllabus Quiz	Lab 01: Estimates and Measurements: DUE by 6:00 PM	Chapter 1.5 Finalize Case 01 Teams
JAN 22–26	Chapter 1.6	Chapter 1.7	Lab 02: Experiments, Variables, and Graphs: DUE by 6:00 PM	Chapter 2.1–2.2
JAN 29 – FEB 02	Chapter 2.3 DUE: Case Study 01	Chapter 2.4	Lab 03: One-Dimensional Motion: DUE by 6:00 PM	Chapter 2.6
FEB 05–09	Chapter 2.7	Chapter 2.9	Exam 01: Ch 01–02 DUE by 6:00 PM	Chapter 3.1
FEB 12–16	Chapter 3.2 Finalize Case 02 Teams	Chapter 3.2–3.3	Lab 04: Momentum and Collisions: DUE by 6:00 PM	Chapter 3.3
FEB 19–23	Chapter 3.4	Chapter 4.1	Lab 05: Work and Energy DUE by 6:00 PM	Chapter 4.2
FEB 26 – MAR 01	Chapter 4.3 DUE: Case Study 02	Chapter 4.3–4.4	Lab 06: Specific Heat DUE by 6:00 PM	Chapter 4.4
MAR 04–08	Chapter 5.1	Chapter 5.2	Exam 02: Ch 03–04 DUE by 6:00 PM	Chapter 5.3–5.4
MAR 11–15	Chapter 5.5 Finalize Case 03 Teams	Chapter 5.6	Lab 07: Speed of Sound DUE by 6:00 PM	Chapter 6.1
MAR 18–22	Spring Break! No Class!	Spring Break! No Class!	Spring Break! No Class!	Spring Break! No Class!
MAR 25–29	Chapter 6.2	Chapter 6.3	Lab 08: Coulomb's Law DUE by 6:00 PM	Chapter 6.4
APR 01–05	Chapter 6.5 DUE: Case Study 03	Chapter 6.6	Lab 09: DC Circuits DUE by 6:00 PM	Chapter 7.1
APR 08–12	Chapter 7.2 Finalize Case 04 Teams	Chapter 7.3	Exam 03: Ch 05–06 DUE by 6:00 PM	Chapter 7.4
APR 15–19	Chapter 7.5	Chapter 8.1	Lab 10: Refraction DUE by 6:00 PM	Chapter 8.2
APR 22–26	Chapter 8.3–8.4 DUE: Case Study 04	Chapter 8.5–8.6	Lab 11: Color DUE by 6:00 PM	Study Day! No Class!
APR 29 – MAY 03	Exam 04: Ch 07–08 Due by 4:00 PM			

Building Emergency Plan

An Emergency Procedures Summary (EPS) for the building in which this class is held will be discussed during the first week of this course. EPS and Building Emergency Plan (BEP) documents for most buildings on campus are available at https://uca.edu/go/bep-library. Every student should be familiar with emergency procedures for any campus building in which they spend time for classes or other purposes.