

Updated: Wednesday, December 6, 2023

# Physics 240, Spring 2024, Course Syllabus

**Instructor:** Dr. Matthew M. Waite, SECC 369, 610-436-2573, [mwaite@wcupa.edu](mailto:mwaite@wcupa.edu)

The best way to contact me is via e-mail, see statement below.

**Class Meeting:** Lecture MWF 1-1:50 (TBD)

**Office Hours:** MWF 10-11:59 AM, R 11-11:59 AM, or by appointment

(Scan QR code to email me for an appointment request).

**Course Web Page:** [D2L](#)



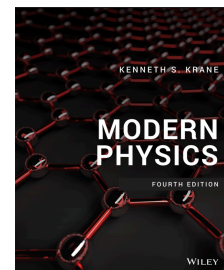
Course information can be found here throughout the semester. The syllabus, homework problem solutions, and other interesting stuff can be found here. Check it periodically!!

**Text:** *Modern Physics, 4th Ed.*, by Kenneth Krane, John Wiley & Sons (New York, 2012)

Note: This textbook is available as an e-book on VitalSource.

**Grading:**

Exams (4 “hourly”)	12.5% @	50%
Homework		20%
Historical Person Presentation		5%
Attendance Participation		5%
Cumulative Final		20%



**Attendance:**

**Attendance is mandatory.** You are expected to attend every class period, period. Absences due to COVID exposure (needs to be verified) or University-Sanctioned Events are the only exception, and you are to inform your instructor at least one hour BEFORE class to avoid penalty. You are expect to be in class on time as well. Late arrivals will be considered absences.

Excused absences are limited to University-Sanctioned Events (which follow the Excused Absence Policy for University-Sanctioned Events as described in the West Chester University Undergraduate Catalog), and absences due to serious illness or injury (verified by a practicing MD, you must provide me with a phone number), or the death of family members (also to be verified.)

Cell phones and texting are NOT ALLOWED during class. Cell phone use is disruptive to your classmates and to your instructors. Please turn off your phones or put them on **silence**, tuck them away in your bookbag, purse or European carry-all, and forget about them until after class. If I see anyone texting or using their cell phones during class, I will take 5 points off of the nearest exam grade (that’s 5 full points out of 100), and you will be considered “absent” for that day, since you are obviously not mentally present.

**Exams:**

There will be four hourly exams throughout the semester. These hourly exams will focus on the most recently covered lecture and class material, but they should be considered cumulative in the sense that we will be building upon what we have already learned throughout the semester. There will be assigned seating during exams. **I DO NOT give make up exams. If you miss an exam, you will**

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receive a ZERO for that exam and it will be recorded as a zero. Only under very special circumstances will there be any change to this policy, and in those cases, exceptions will be made ONLY when I am notified prior to the scheduled exam time of a conflict. If you have ANY questions or concerns about this particular point, please come talk to me and get clarification BEFORE it's too late!

### **Homework:**

For each chapter, I have posted an assignment of selected problems. These problems will be selected from the current version of the text and will usually be posted on my course website. The due date is clearly indicated. All homework is due by 8:00 pm on the indicated due date. No homework will be accepted after 8:00 pm on the due date. Solutions will be posted on the web after the due date. Be sure to check the solutions, in most cases I have made every attempt to present the most straightforward solution to a given problem.

At the end of the semester, one homework grade will be dropped, so, if you miss one assignment, it's no big deal. But you don't want to make a habit of it; it could be very damaging to your grade at the end of the semester. Homework is worth 15% of your final grade, more than any one exam!

I encourage you to discuss the homework problems together, and to work and learn together, but any assignment you turn in for a grade must be **YOUR OWN WORK!!** It is in your best interest to learn how to do the problems yourself.

Online homework solution "aids", such as (but not exclusively limited to) chatGPT, Chegg, Cramster, Course Hero, Clutch Prep, etc. are not allowed. Using these sites in this course is considered cheating and is grounds for a WCU Academic Integrity Violation which could result in failure of the course. If you want/need *any* assistance on homework assignments, you should see me, your course instructor. **DO NOT USE ANY ONLINE RESOURCES ON HOMEWORK IN THIS CLASS.**

**Intellectual Property Statement:** The instructor utilizes copyrighted materials under the "Freedom and Innovation Revitalizing United States Entrepreneurship Act of 2007" (Fair Use Act). Apart from such copyright protected materials, all other intellectual property associated with this course is owned and copyrighted by the instructor, including, but not limited to, lectures, course discussions, course notes and supplementary materials posted or provided to students authored by the instructor, assessment instruments such as exams, and presentation slides. No recording, copying, storage in a retrieval system, or dissemination in any form by any means of the intellectual property of the instructor, in whole or in part, is permitted without prior written permission of the instructor. Stop by my office and tell me "Found It" to get an extra five points on your lowest exam grade. You need to tell me this like it's some secret password being passed between spies. When such permission is granted, it must specify the utilization of the intellectual property and all such permissions and waivers shall terminate on the last day of the finals in the semester in which this course is held.

Links and references to on-line resources provided by the instructor may lead to other sites. The instructor does not sponsor, endorse or otherwise approve of any information appearing in those sites, nor is responsible in any way for the content of those sites. The instructor makes no warranty or responsibility for the copyright status of such material. However, should problems with copyright status be brought to the attention of the instructor, reference to offending materials will be removed.

**Common University Syllabus Content: (See Supplemental Document on D2L also)**  
ACADEMIC & PERSONAL INTEGRITY

It is the responsibility of each student to adhere to the university's standards for academic integrity. Violations of academic integrity include any act that violates the rights of another student in academic work, that involves misrepresentation of your own work, or that disrupts the instruction of the course. Other violations include (but are not limited to): cheating on assignments or examinations; plagiarizing, which means copying any part of another's work and/or using ideas of another and presenting them as one's own without giving proper credit to the source; selling, purchasing, or exchanging of term papers; falsifying of information; and using your own work from one class to fulfill the assignment for another class without significant modification. Proof of academic misconduct can result in the automatic failure and removal from this course. For questions regarding Academic Integrity, the No-Grade Policy, Sexual Harassment, or the Student Code of Conduct, students are encouraged to refer to the Department Undergraduate Handbook, the Undergraduate Catalog, the Ram's Eye View, and the University website at [www.wcupa.edu](http://www.wcupa.edu).

#### STUDENTS WITH DISABILITIES

If you have a disability that requires accommodations under the Americans with Disabilities Act (ADA), please present your letter of accommodations and meet with me as soon as possible so that I can support your success in an informed manner. Accommodations cannot be granted retroactively. If you would like to know more about West Chester University's Services for Students with Disabilities (OSSD), please visit them at 223 Lawrence Center. The OSSD hours of Operation are Monday – Friday, 8:30 a.m. – 4:30 p.m. Their phone number is 610-436-2564, their fax number is 610-436-2600, their email address is [ossd@wcupa.edu](mailto:ossd@wcupa.edu), and their website is at [www.wcupa.edu/ussss/ossd](http://www.wcupa.edu/ussss/ossd).

#### EXCUSED ABSENCES POLICY

Students are advised to carefully read and comply with the excused absences policy, including absences for university-sanctioned events, contained in the WCU Undergraduate Catalog. In particular, please note that the "responsibility for meeting academic requirements rests with the student," that this policy does not excuse students from completing required academic work, and that professors can require a "fair alternative" to attendance on those days that students must be absent from class in order to participate in a University-Sanctioned Event.

#### REPORTING INCIDENTS OF SEXUAL VIOLENCE

West Chester University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972 and guidance from the Office for Civil Rights, the University requires faculty members to report incidents of sexual violence shared by students to the University's Title IX Coordinator, Ms. Lynn Klingensmith. The only exceptions to the faculty member's reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. Faculty members are obligated to report sexual violence or any other abuse of a student who was, or is, a child (a person under 18 years of age) when the abuse allegedly occurred to the person designated in the University protection of minors policy. Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is set forth at the webpage for the Office of Social Equity at [http://www.wcupa.edu/\\_admin/social.equity/](http://www.wcupa.edu/_admin/social.equity/).

#### EMERGENCY PREPAREDNESS

All students are encouraged to sign up for the University's free WCU ALERT service, which delivers official WCU emergency text messages directly to your cell phone. For more information, visit [www.wcupa.edu/wcualert](http://www.wcupa.edu/wcualert). To report an emergency, call the Department of Public Safety at 610-436-3311.

#### ELECTRONIC MAIL POLICY

It is expected that faculty, staff, and students activate and maintain regular access to University provided e-mail accounts. Official university communications, including those from your instructor, will be sent through your university e-mail account. You are responsible for accessing that mail to be sure to obtain official University communications. Failure to access will not exempt individuals from the responsibilities associated with this course.

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Date	Week	Reading	Topic	Hmwk
1/22/24	1-M	Ch. 1	Introduction & Review of Classical Physics	
1/24/24	W	Ch. 1	Review of Classical Physics	
1/26/24	F	Ch. 2	Special Theory of Relativity	
1/29/24	2-M	Ch. 2	Special Theory of Relativity	1
1/31/24	W	Ch. 2	Special Theory of Relativity	
2/2/24	F	Ch. 2	Special Theory of Relativity	
2/5/24	3-M	Ch. 3	The Particle-Like Properties of EM Radiation	
2/7/24	W	Ch. 3	The Particle-Like Properties of EM Radiation	
2/9/24	F	Ch. 3	The Particle-Like Properties of EM Radiation	2
2/12/24	4-M	Ch. 3	The Particle-Like Properties of EM Radiation	
<b>2/14/24</b>	<b>W</b>	<b>EXAM I</b>	<b>Chapters 1 &amp; 2</b>	
2/16/24	F	Ch. 3	The Particle-Like Properties of EM Radiation	
2/19/24	5-M	Ch. 4	The Wave-Like Properties of Particles	3
2/21/24	W	Ch. 4	The Wave-Like Properties of Particles	
2/23/24	F	Ch. 4	The Wave-Like Properties of Particles	
2/26/24	6-M	Ch. 5	The Schrödinger Equation	4
2/28/24	W	Ch. 5	The Schrödinger Equation	
3/1/24	F	Ch. 5	The Schrödinger Equation	
3/4/24	7-M	Ch. 6	The Rutherford-Bohr Model of the Atom	5
3/6/24	W	Ch. 6	The Rutherford-Bohr Model of the Atom	
<b>3/8/24</b>	<b>F</b>	<b>EXAM II</b>	<b>Chapters 3, 4, and 5</b>	
<b>3/11/24</b>	<b>8-M</b>	<b>Spring Break</b>	<b>No Classes</b>	
<b>3/13/24</b>	<b>W</b>	<b>Spring Break</b>	<b>No Classes</b>	
<b>3/15/24</b>	<b>F</b>	<b>Spring Break</b>	<b>No Classes</b>	
3/18/24	9-M	Ch. 6	The Rutherford-Bohr Model of the Atom	
3/20/24	W	Ch. 6	The Rutherford-Bohr Model of the Atom	6
3/22/24	F	Ch. 7	The Hydrogen Atom in Wave Mechanics	
3/25/24	10-M	Ch. 7	The Hydrogen Atom in Wave Mechanics	
3/27/24	W	Ch. 7	The Hydrogen Atom in Wave Mechanics	
3/29/24	F	Ch. 7	The Hydrogen Atom in Wave Mechanics	
4/1/24	11-M	Ch. 8	Many Electron Atoms	7
4/3/24	W	Ch. 8	Many Electron Atoms	
4/5/24	F	Ch. 8	Many Electron Atoms	
4/8/24	12-M	Ch. 11	Solid-State Physics	8
<b>4/10/24</b>	<b>W</b>	<b>EXAM III</b>	<b>Chapters 6, 7, and 8</b>	
4/12/24	F	Ch. 11	Solid-State Physics	
4/15/24	13-M	Ch. 12	Nuclear Structure & Radioactivity	
4/17/24	W	Ch. 12	Nuclear Structure & Radioactivity	11
4/19/24	F	Ch. 12	Nuclear Structure & Radioactivity	
4/22/24	14-M	Ch. 12	Nuclear Structure & Radioactivity	
4/24/24	W	Ch. 13	Nuclear Reactions & Applications	12
4/26/24	F	Ch. 13	Nuclear Reactions & Applications	
4/29/24	15-M		Selected Presentations	
5/1/24	W		Selected Presentations	13
<b>5/3/24</b>	<b>F</b>	<b>EXAM IV</b>	<b>Chapters 11, 12, and 13</b>	
		<b>Final Exam</b>	<b>Chapters 1-8 (1:00 pm to 3:00 pm)</b>	