PHYSICS II (PHY 180)

COURSE AND INSTRUCTOR INFORMATION

Course: PHY 180 (Physics II)
Lecture Time: MWF: 10:00 am – 10:50 am
Discussion Time: Tuesday 2:00 pm – 2:55 pm

Instructor: Anil K. Kandalam (Dr. Kandalam or Dr. K)
Office Location: Schmucker Science South, SS 403A
Email: akandalam@wcupa.edu
Office Hours (*via* Zoom only): Monday, Wednesday: 1:00 pm – 3:00 pm
Tuesday: 9:00 am – 11:00 am, Friday: 1:00 pm – 2:00 pm
Schedule zoom appointment during one of the posted times using the link:
https://calendly.com/anil_k_kandalam

REQUIRED COURSE MATERIALS & INCLUSIVE ACCESS

***Textbook and Homework System*:** Fundamentals of Physics (10th edition) by *Halliday, Resnick & Walker* (John Wiley & Sons) with *Wiley-Plus*. An *e*-text of this book is available through Wiley-Plus website.

Wiley-Plus*:** This course uses the online platform the ***new Wiley-Plus for readings and homework assignments.

***Accessing Wiley-Plus*:** Follow the instructions given in the attached "course flyer" to register for this course section. Remember that our course section ID is: **A51315**. You should be able to register for the course, access the textbook, and the first homework assignment.

***Inclusive Access*: The Wiley-Plus platform is not free**. You will be directly charged by the University under "Inclusive Access" program. This means you should see $130.59 charge appear on your Bursar's account. This is a discounted price. Since most of you took PHY170 last semester with me, you won't be charged again. Only students who did not take PHY170 at WCU (Fall 2019 or Spring 2020) will be charged.

You can **opt-out** of ***Inclusive Access*** until midnight of 08/31/2020. To opt out you must use the link provided in the email sent to your WCUPA email account from the WCU campus store. If you opt-out before the deadline, you receive a refund. Questions about Inclusive Access should be directed to: inclusiveaccess@wcupa.edu

COVID-19 STATEMENT

Part of West Chester University's response to the COVID-19 pandemic was to switch the vast majority of instruction to remote. This decision was made out of an abundance of caution to protect the health of all members of the WCU community. Faculty have been asked to make every effort to adapt their courses to this novel situation while still meeting the critical learning outcomes of the course. Students are asked to discuss any problems with the new course format and schedule directly with their instructors. Patience and flexibility on everyone's behalf are critical to our community's navigation of this public health crisis.

For this particular course, the following alternative modalities are being utilized:

1) Most of the lecture and problem sessions will be held through zoom during the *posted lecture and discussion times* for this course. I will send you a zoom link on Friday, 21st, August 2020.

2) For few lectures (topics), I will post pre-recorded lectures on D2L. Students are required to watch these videos. For any questions on these pre-recorded lecture videos, students must email me to set up a zoom office meeting.

COURSE GOALS AND STUDENT OUTCOMES

Our goals are to explore, analyze, and investigate the world around us and to gain a better understanding of how and why various physical phenomena occur. In our study of these physical phenomena, we aim to use our mathematical tools to aid us in gaining not only a qualitative conceptual perspective, but to provide a quantitative applied understanding as well.

Course PHY180 is an approved course in the WCU General Education Program. It is designed to help students meet the following General Education goals:

1. *General Education Goal #2*: ***Ability to employ quantitative concepts and mathematical methods:*** Virtually every topic discussed in the class will have a quantitative aspect that will require advanced mathematics (calculus). These methods will be employed during class examples, recitation quizzes, midterm exams, and laboratory sessions.
2. *General Education Goal #3*: ***Ability to think critically and analytically***: New concepts will be presented each week that build upon previously discussed material. The relationships and connections between the concepts will require students to think critically and analytically about the reason the physical phenomena occur and how they occur. Critical and analytical thinking are essential for applying these interconnected yet seemingly diverse concepts to efficiently solve homework and exam problems.

EXPECTATIONS

This is a fast-paced course. If you note the schedule at the end of this syllabus, you will see that we cover approximately one chapter per week. The curriculum of this course is determined in such a manner that you should leave this course with a broad knowledge of a variety of physical phenomena and a better understanding of how to view and approach physical problems. This is the reason most of you have been required by your majors to take this class. For a successful completion of this course, you are not only expected to come to the class regularly, but also take notes, solve the problems assigned in the class, and read the example problems from the textbook. **In order to keep up with the pace of the course, I strongly suggest you read the sections in the text indicated in the schedule before you get to class**.

D2L

This course has a D2L page. D2L must be your first access point. I will post quizzes, lecture slides, announcements, practice problems etc. on D2L.

GRADING

The final grade assessment for this course will be based on the following:

- Laboratory...……14%
- Quizzes…….……6%
- Homework ……..15%
- Exams (3 @ 15% each)……45%
- Final exam…..……..20%

Letter grades will be assigned on the following scale. However, I reserve the right to adjust the weights of individual components, or the scale to account for unforeseen circumstances.

93 – 100 %	A	73 – 76 %	C
90 – 92 %	A–	70 – 72 %	C–
87 – 89 %	B+	67 – 69 %	D+
83 – 86 %	B	63 – 66 %	D
80 – 82 %	B–	60 – 62%	D–
77 – 79 %	C+	59% or lower	F

LABORATORY

This course has a laboratory component. Most weeks you will have a lab session. Your lab grade will be factored into your final grade for this course. The allotted laboratory time is only 2 hours; therefore, it is your responsibility to prepare for the lab session by reading the instructions **before lab each week**. At the end of the semester, your lab instructor will give your lab grades to me and I will record exactly what she provides. All lab issues are to be discussed with your lab instructor. Please see the lab syllabus for more details.

QUIZZES

There will be a total of **ten** quizzes this term. Each quiz comprises of five concept-based multiple-choice questions that are based on the topics covered during the previous three or four lectures. A tentative list of days on which quizzes will be given can be found in the course schedule section of this syllabus. **You will have 24 hours to complete the quiz after it is posted on D2L. I will email everyone when the quiz is available on D2L.** Please note that I reserve the right to modify the dates on which quizzes are given, as well as the total number of quizzes given, to reflect unforeseen circumstances. Quizzes will take approximately ten to fifteen minutes to complete. These quizzes are answered by selecting "*Quizzes*" under "Assessment" drop-down menu on the course ***D2L page***. I will drop the lowest quiz grade. If you miss a quiz, you will receive a ZERO for it. **No make-up quizzes.** The only exception is for Excused Absences, as outlined in the Excused Absences Policy contained in the WCU Undergraduate Catalog. Appropriate documentation must be provided.

HOMEWORK POLICIES

This course will utilize an online homework system via *Wiley-Plus*. Homework will be assigned every week, starting from the first week of classes. Typically, the assignments are due by **11:00 PM (EST) on the due date**. Solutions to all homework problems will be available on Wiley-Plus immediately after the assignment is due. So, **no late submissions are allowed**. I reserve the right to modify homework frequency and due-dates to reflect unforeseen circumstances. I will not drop any homework grades.

Please remember that you are responsible for completing homework assignments in a timely manner and informing me of problems, if any, in accessing the homework. Failure to complete an assignment because you could not access the homework an hour before it is due is not an excuse.

REGULAR EXAM POLICY

Four in-class exams (closed book) will be given during the course of the semester. Each of these exams will consist of several open-ended numerical problems for which the students are expected to show all the work (math steps). *I will drop the lowest exam grade*. All exams will be administered on *Crowdmark*, a web-based software that we will be using to manage exam submissions and grading. During all these exams, you must login into zoom and must turn on your webcam or camera on your computer and point it directly

towards your desk (not your face) where you write the exam so that I can clearly see everything that is on that desk. You will scan and upload your hand-written exam onto *Crowdmark* website. A separate Crowdmark Guide with detailed instructions on how to use this software for the exam will be posted on D2L. *Different options on how to convert handwritten notes to PDF are given on the last page of this syllabus document.*

If you miss an exam: If you miss an exam, you will receive a ZERO on that exam. The policy of dropping an exam score is meant to alleviate the need for make-up exam. This means every student has one in-class exam that they can for whatever reason, sickness, family emergency, etc., not be counted. **Therefore, I will not give a make-up exam**. The exceptions, however, are limited to the absences related to University Sanctioned Events (see below). If you miss an exam for a University Sanctioned Event you must notify me in advance so that we can arrange for you to take the exam in a manner consistent with its integrity. You must also provide some form of documentation (performing arts program, competition schedule etc.

FINAL EXAM

The final exam (closed book) will include all topics covered (cumulative) in the course and is ***MANDATORY***. Final exam will also be administered through *Crowdmar*k. The final exam will consist of mostly multiple-choice questions (conceptual and numerical) and few open-ended questions. Missing the final exam will result in a zero for the exam unless EXTREME circumstances apply. Even in that case, extra questions will be added to the make-up final.

The date and time of the final exam for this course (as set by the registrar, as of 08/18/2020) is:

Wednesday, December 9, 2020 from 10:30 am – 12:30 pm

You should plan to be available for the entire finals week. We have in past semesters had to reschedule finals due to weather related events.

CONTACT POLICY

Please include ***PHY180*** in the subject line of any e-mail. I try to respond to e-mail within 24hrs. Although I will try to answer all questions directed to me by e-mail, most problems related to course content are best discussed during office hours (via zoom).

ATTENDANCE POLICY

A regular attendance to the lectures is an important part of this course and I highly recommend it. This is your chance to ask questions, see examples and get help in solving problems. I am here to guide you through the material. Attendance will benefit your understanding and therefore grade. However, **I do not give an attendance grade**. Students must understand that they are responsible for all material covered and assigned during their absences (excused and unexcused) and that they are responsible for the academic consequences of their absences. The lab component of this course, however, has a different attendance policy. **Please see lab syllabus for lab attendance policy**.

EXECUSED ABSENCES POLICY

If you are participating in a University sanctioned event during one of our scheduled exams you must notify me in advance. You must provide some form of documentation. We can then arrange for you to take the exam in a manner consistent with exam integrity. 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.

COURSE SCHEDULE: A tentative schedule for the course is given below. I will try to follow it as closely as possible. **I reserve the right to modify the schedule as needed over the course of the semester**.

Date	Lec	Lecture & Discussion	Reading	Laboratory
M Aug. 24	**1**	21. Electric Charge, Coulomb's Law	21.1	Organizational Meeting
T Aug. 25		**Ch 21: Problem Solving**		
W Aug. 26	**2**	21. Quantization of Charge	21.2 - 21.3	
F Aug. 28	**3**	22. Electric Fields	22.1, 22.2, 22.6	
M Aug. 31	**4**	22. Electric Fields	22.3, 22.7	Electric Charge
T Sept. 1	**5**	22. Electric Fields	22.4	
W Sept. 2		**Ch. 22: Quiz & Problem Solving**		
F Sept. 4	**6**	23. Gauss' Law	23.1 – 23.4	
M Sept. 7		**NO CLASS – LABOR DAY**		**NO LABORATORY**
T Sept. 8	**7**	23. Gauss' Law	23.5 – 23.6	
W Sept. 9		**Ch. 23: Quiz & Problem Solving**		
F Sept. 11	**8**	24. Electric Potential	24.1	
M Sept. 14	**9**	24. Electric Potential	24.2 – 24.3	Equipotential Lines
T Sept. 15		**Ch. 24: Quiz & Problem Solving**		
W Sept. 16	**10**	24. Electric Potential	24.6 – 24.7	
F Sept. 18		**EXAM 1: Chapters 21 – 23**		
M Sept. 21	**11**	25. Capacitance	25.1, 25.2	**NO LABORATORY**
T Sept. 22	**12**	25. Capacitance	25.4, 25.5	
W Sept. 23		**Ch. 25: Quiz & Problem Solving**		
F Sept. 25	**13**	25. Capacitance	25.3	
M Sept. 28	**14**	26. Current	26.1, 26.2	Ohm's Law
T Sept. 29	**15**	26. Current	26.3 – 26.5	
W Sept. 30		**Ch. 26: Quiz & Problem Solving**		
F Oct. 2	**16**	27. Circuits (Single-loop)	27.1	
M Oct. 5	**17**	27. Circuits (Multi-loop)	27.2	**NO LABORATORY**
T Oct. 6		**Ch. 27: Problem Solving**		
W Oct. 7	**18**	27. Circuits (RC Circuits)	27.4	
F Oct. 9		**EXAM 2: Chapters 24 – 26**		
M Oct. 12	**19**	28. Magnetic Fields	28.1 – 28.2	Kirchhoff's Laws
T Oct. 13	**20**	28. Magnetic Fields	28.3 – 28.4	
W Oct. 14	**21**	28. Magnetic Fields	28.6 – 28.8	
F Oct. 16		**Ch. 28: Quiz & Problem Solving**		
M Oct. 19	**22**	29. Magnetic Fields due to Current	29.1 – 29.2	RC Circuits
T Oct. 20	**23**	29. Magnetic Fields due to Current	29.3	
W Oct. 21		**Ch. 29: Quiz & Problem Solving**		
F Oct. 23	**24**	29. Magnetic Fields due to Current	29.4 – 29.5	
M Oct. 26	**25**	30. Induction	30.1 – 30.2	**NO LABORATORY**
T Oct. 27	**26**	30. Induction	30.3 – 30.5	
W Oct. 28	**27**	30. Induction	30.6	
F Oct. 30		**Ch. 30: Quiz & Problem Solving**		
M Nov. 2	**28**	30. Induction	30.7 – 30.8	Electromagnetic Induction
T Nov. 3	**29**	31. AC Circuits	31.1 – 31.2	

Date	Lec	Lecture & Discussion	Reading	Laboratory
W Nov. 4	**30**	31. AC Circuits	31.3, 31.4	
F Nov. 6		**EXAM – 3: Chapters 27 – 30**		
M Nov. 9		**Ch. 31: Problem Solving**		AC Circuits
T Nov. 10	**31**	32. Maxwell's Equations	32.1 – 32.3	
W Nov. 11	**32**	32. Maxwell's Equations	32.4 – 32.6	
F Nov. 13	**33**	33. Electromagnetic Waves	33.1 – 33.2	
M Nov. 16	**34**	33. Electromagnetic Waves	33.4 – 33.5	Basic Optics
T Nov. 17		**Ch. 33: Quiz & Problem Solving**		
W Nov. 18	**35**	34. Images	34.1 – 34.2	
F Nov. 20	**36**	34. Images	34.4	
M Nov. 23		**THANKSGIVING BREAK**		**NO LABORATORY**
T Nov. 24				
W Nov. 25				
F Nov. 27				
M Nov. 30	**37**	35. Physical Optics (Interference)	35.1 – 35.2	Interference & Diffraction
T Dec. 1		**Ch. 34: Quiz & Problem Solving**	35.3	
W Dec. 2		**EXAM – 4: Chapters 30 – 34**		
F Dec. 4	**38**	35 & 36 Interference & Diffraction	35.3 & 36.1	
M Dec. 7	**39**	36. Physical Optics (Diffraction)	36.3 & 36.5	
FINAL EXAM: WEDNESDAY, DECEMBER 9, 2020; 10:30 AM – 12:30 PM				

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. Their phone number is 610-436-2564, their fax number is 610-436-2600, their email address is ossd@wcupa.edu, and their website is at https://www.wcupa.edu/universityCollege/ossd/. In an effort to assist students who either receive or may believe they are entitled to receive accommodations under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, the University has appointed a student advocate to be a contact for students who have questions regarding the provision of their accommodations or their right to accommodations. The advocate will assist any student who may have questions regarding these rights. The Director for Equity and Compliance/Title IX Coordinator has been designated in this role. Students who need assistance with their rights to accommodations should contact them at 610-436-2433.

E-MAIL POLICY STATEMENT

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.

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

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 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. 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.

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 comply with the requirements of Title IX of the Education Amendments of 1972 and the University's commitment to offering supportive measures in accordance with the new regulations issued under Title IX, the University requires faculty members to report incidents of sexual violence shared by students to the University's Title IX Coordinator. 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: https://www.wcupa.edu/_admin/diversityEquityInclusion/sexualMisconduct/default.aspx

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. To report an emergency, call the Department of Public Safety at 610-436-3311.

DIFFERENT OPTIONS TO CONVERT HANDWRITTEN NOTES TO PDF

OPTION #1 - Use an APP on your phone

- *Adobe Scan* is an app for your phone that can take pictures and turn them into a PDF document. Here is more information about the Adobe Scan free app ...

  https://acrobat.adobe.com/us/en/mobile/scanner-app.html

- CamScan (https://www.camscanner.com/)

OPTION #2 - Scanning Documents on the Notes App (*** iPhone Users Only ***)

SOURCE: Dr. KEVIN APTOWICZ

1) Open the Notes app on your iPhone.
2) Tap the icon in the bottom right to create a "new note".
3) At the bottom of the screen, press the camera icon.
4) Select "Scan Documents".
5) It will go to the camera screen. Place the full page of your document under the camera. Make sure there is enough light on the document, so the camera picks up every word.
6) Press the white button to scan each page. Multiple pages can be scanned.
7) Save the note. Send the note to your email.
8) Download the file from the email onto a computer. Upload the file from the computer to Crowdmark!

WileyPLUS

Find and register for your course section!

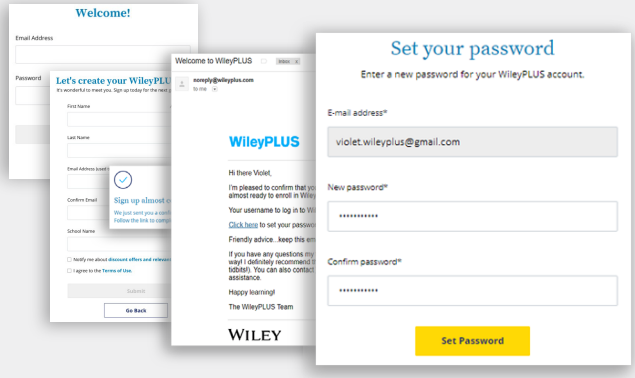
Your Course Section ID is

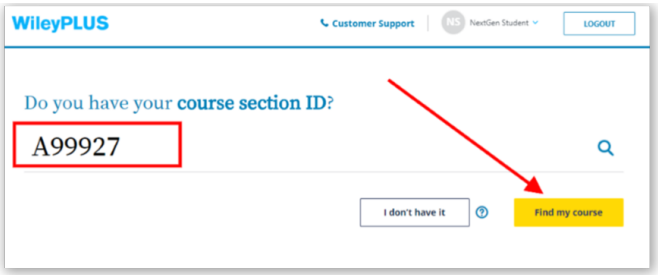
A51315

Step 1:

Sign up for a WileyPLUS account

- Visit www.wileyplus.com/go/login.
- Click "Create Account" to create an account.
- Fill in your account details and set your password.
- If you already have a WileyPLUS account, just log in and click "Add more courses."





Step 2:

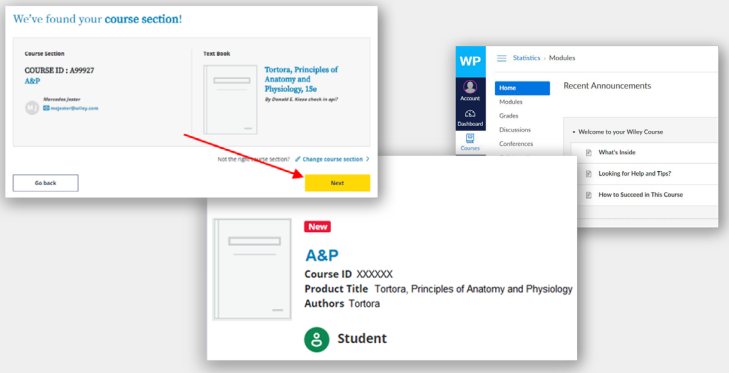
Enter your course section ID

- Your six-symbol course section ID is provided by your instructor.
- Don't have your course section ID? Use the course finder and enter your school.

Step 3:

Access your course section

- Review your course section overview.
- Click the course section link to access your new course.



Need Help?

Live chat support: www.wileyplus.com/go/wpngsupport

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