Physics 208 Spring 2019

Ongoing changes due to COVID-19 situation:

Midterm-2 indefinitely postponed

All content will be coming to you on Canvas.



How does this course work?

Policies / Conflicts / Makeups (https://canvas.wisc.edu/courses/186671/pages/course-policiesconflicts-and-makeups) Course Grading (https://canvas.wisc.edu/courses/186671/pages/course-grading) Textbooks (https://canvas.wisc.edu/courses/186671/pages/textbook) Lab Manual (https://canvas.wisc.edu/courses/186671/pages/Lab%20Manual? titleize=0) Honors Section

What do I need to do?

<u>My active learning</u> (https://canvas.wisc.edu/courses learning) <u>My jobs for Phy208 this week</u> (https://canvas.wisc.edu/courses

Syllabus

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Course Grading

COVID-19 situation update:

Midterm 2 and 3 are canceled.

Weights of homework and quiz increased.

Homework deadlines extended to the end of the semester. This will help partially mitigating issues that some people have with scheduling in these difficult times.

Weekly quizzes remain due weekly. This helps keep the pace of the class and provides you continuous feedback.

There will be a lab quiz posted on Electricity labs. There will be "online labs" for the remainder of the semester. You will hear more about this from the TAs.

Final will be multiple choice. Quizzes are practice for this. In addition we will give you a practice final.

Letter grades will be assigned. Students can opt for COVID-19 Pass/Fail, per Chancellor's email.

All grade elements of the course must be completed, unless an email exemption is granted, in order to achieve a Pass grade.

Item	Weight in Grade	Description
Homework	25%, was 10%	Online through WebAssign
Laboratory	10%	Grade based on participation, lab report and lab-based questions.
Quiz	25% , was 10%	Conceptual questions based on Lectures & Discussion.
Midterm Exam 1	15%	
Midterm Exam 2	- (added to HW)	Canceled
Midterm Exam 3	- (added to Quiz)	Canceled
Final Exam	25%	

Textbook

Textbook:

• Author: Deb Katz

*Title:***Physics for Scientists and Engineers: Foundations and Connections, Extended Version with Modern Physics.**

(Same as Fall 2019, Physics 207; Apparently, you have already paid for the use of WebAssign and eText when you registered. See below)

• <u>eBook for Katz's Physics for Scientists and Engineers: Foundations and Connections</u> (<u>https://canvas.wisc.edu/courses/186671/modules/342605</u>)

This course will require **WebAssign** from Cengage. **WebAssign** contains the eBook, various study tools, homework, and assignments.

<u>Purchase Options</u> – If you took Physics 207 in the spring or fall of 2019. You have already paid for your materials and will NOT need to pay anything.

If you didn't take Physics 207 during this time, you will have a couple price options. You will have access to your course right away, so you don't have to decide. I will email you before you lose access at that time please choose the option best for you.

Purchase Options - choose the best ONE for you:

- 1. WebAssign with eBook for Katz Physics for Scientists and Engineers: Foundations and Connections, w/Modern Physics. Cost on the below site \$71.25
 - 1. Direct-to-student site: <u>http://www.cengagebrain.com/course/3632110</u> (<u>http://www.cengagebrain.com/course/3632110</u>)
- 2. Buy Cengage Unlimited Subscription. With a Cengage Unlimited subscription, you get WebAssign and more! \$119.99
- This is the perfect option if you are taking additional courses that use Cengage materials or would like a physical copy of the textbook.

Getting Registered

To access your course materials, click on the WebAssign homework link in Canvas and create, or login with, your Cengage account.

If you have questions or issues about WebAssign, following are a couple of options for you. Please don't contact your professor with WebAssign issues.

- Cengage representatives will be in B227 Van Vleck if you have issues registering for your course, have specific questions on WebAssign or how to get started.
 - Thursday, January 23 and Friday, January 24
 - Time: 9:00 am 3:30 pm
- To verify the system is up, please go to <u>https://techcheck.cengage.com/ (Links to an external site.)Links to an external site. (https://techcheck.cengage.com/)</u>
- If you have specific technical issues, please contact technical support 24/7
 - 1-800-354-9706
 - Online chat and self-help <u>www.cengage.com/support (Links to an external site.)Links</u> to an external site. (http://www.cengage.com/support)
 - Make sure to allow pop-ups: <u>https://www.cengage.com/lms_docs/system_check/popupsfailed/popupsfailed_chrome.htm</u>

(https://www.cengage.com/lms_docs/system_check/popupsfailed/popupsfailed_chrome.htm)

If you haven't received a response back from technical support in 24-48 hours, please email <u>lisa.bowers@cengage.com (mailto:lisa.bowers@cengage.com)</u>.

Lab Manual

Purchase the lab manual at the bookstore. It contains worksheets that you will turn into your TA for grading. Some of the labs this semester will be online through Canvas, replacing those sections of the lab manual.

Physics 208 Lab Manual

Light, Electricity, Magnetism, Modern Physics

Department of Physics University of Wisconsin—Madison

Fall 2018



Updated 12/2017

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Week2 - Superposition and interference of Light

• • • • • •	P	Week2 Lecture 1 - Superposition and interference : Click for reading assignment, slides, resources Jan 27	<	• • _
• • • • • •	P	Week2Disc1	Ø	• • _
• • • • • •	\$	Quiz 1 - Waves and interference Jan 29 5 pts	•	• • _
• • • • • •	Ð	Week2 Lecture 2 - Light interference, diffraction : Click for reading assignment, slides, resources Jan 29	✓	• • •
• • • • • •	Ð	Week2Disc2 3 pts	•	• • • _

• • • • • •	- We	eek3 Diffraction, then ray optics and lenses	?	+	0 0
••• •• ••	Lab	s start this week		Ø	• • _
••• ••	Ð	Week3 Lecture 1 - Diffraction, resolution, thin film interference : Click for reading assignment, slides, resources Feb 3		•	• • _
• • • • • •	P	Week3Disc1 3 pts			• • _

••• •• ••	**	Quiz 2 - Light and Thin-film Interference Feb 5 5 pts	0	• • _
••• •• ••	B	Week3 Lecture 2 - Refraction and Lenses : Click for reading assignment, slides, resources	⊘	• • _
• • • • • •	P	Week3Disc2 3 pts	•	• • _
••• •• ••	P	Lab 1 - Interference and Diffraction (need lab manual from bookstore) 10 pts	♥	• • •

• • • • • •	- We	eek4 - Optical Instruments	+	• •
• • • • • •	P	Week4 Lecture 1 - Lenses and your eye Feb 10		• • • _
• • • • • •	P	Week4Disc1 3 pts	•	• • _
• • • • • •	\$	Quiz 3 - Refraction & Lenses Feb 12 4 pts	•	• • _
• • • • • •	P	Week4 Lecture 2 - Optical Instruments Feb 12	•	• • _

••• •• ••	Ð	Week4Disc2 3 pts	0	• • _
• • • • • •	P	Lab 2 - Lenses and the eye	?	• • _
• • • • • •	P	Exam 1 Q&A Feb 14	•	• _

••• ••• •••	- We	eek5 - Electric forces and fields (Exam week!	+	•
• • • • • •	Exa Pos TA).	m week, so no quiz, no lab, no 2nd discussion. sible make-up of missed labs (contact your Friday Lecture	•	• • _
• • • • • •	P	Week5 Lecture 1 - Electric Forces and Fields Feb 17	v	• _
•• •• ••	P	Week5Discussion 3 pts	•	• • _
• • • • • •	P	Exam 1 Feb 19 100 pts	v	• • _
• • • • • •	P	Week5 Lecture 2 - Electric Fields Feb 21	Ø	• • _
• • • • • •	No	2nd discussion this week - exam grading	Ø	• • _

• • • • • •	• We	eek6 - Electric Potential and Capacitors	● +	-	•
•• •• ••	P	Week6 Lecture 1 - Electric Potential Feb 24	C		• • _
•• •• ••	P	Week6Disc1 3 pts	C		• • _
•• •• ••	P	Week6 Lecture 2 - Electric Potential & Capacitors Feb 26	C		• • _
•• •• ••	P	Week6Disc2 3 pts	C		• • _
•• •• ••	Ð	Lab 3 - Electric Fields and Electric Potential 10 pts	C		• • _
•••	\$	Quiz 4 - Electric Forces and Fields <u>Multiple Due Dates</u> 5 pts	Ç		• • _



• • • • • •	Ð	Week7Disc1 3 pts	S	• • _
0 0 0 0 0 0 0 0	Ð	Week7 Lecture 2 - Gauss's law and Resistor- Capacitor Circuits Mar 4	<	• • • _
•• •• ••	P	Week7Disc2 3 pts	ø	• • _
•• •• ••	P	Lab 4 - Basic Circuits 10 pts	Ø	• • _
• • • • • •	×?	Quiz 5 - Electric Potential and Capacitors Mar 9 5 pts	<	• • • _

• • • • • •	- We	eek8 - Electric dipoles and dielectrics	+	0 0 0
•••	P	Week8 Lecture 1 -Resistor Capacitor Circuits Mar 9	>	• • _
• • • • • •	P	Week8Disc1 3 pts	•	• _
• • • • • •	P	Week8 Lecture 2 - Electric dipoles and dielectrics Mar 11	v	• _
• • • • • •	P	Week8Disc2 3 pts		• • _

••• ••• ••	P?	Lab 5 - Resistor / Capacitor Circuits & Nerve Signal Propagation 10 pts	S	• • _
• • • • • •	\$	Quiz 6 - Circuits Multiple Due Dates 5 pts	?	• • • _
• • • • • •	• W0	eek9 - Magnetic fields and forces (exam pos 📀	+	0 0 0
••• •• ••	P	Week9 Lecture 1 - Magnetic Fields and Forces on Charged Particles Mar 23	•	• • _
•• •• ••	Ð	Week9Disc Mar 24 3 pts	v	• • _
• • • • • •	Ð	Week9 Lecture 2 - Currents generate magnetic fields	v	• • _

Image: Week9Disc2 Mar 26 | 3 pts

Weekly Friday Q&A

⋮ ▼ Week10 -Magnetic dipoles and magnetic induc...

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•• •• ••		Week10 Lecture 1 - Current Loops and Magnetic Dipoles Mar 30	Ø	• • _
• • • • • •	Ð	Week10Disc1 3 pts	<	• • _
• • • • • •	P	Week10 Lecture 2 - Magnetic Induction Apr 1	<	• • _
•• •• ••	P	Week10Disc2 3 pts	Ø	• • _
• • • • • •	P	Lab 6 - Magnetic Fields 10 pts	Ø	• • _
•••	\$3	Quiz 7 - Magnetic FleIds and Forces Apr 1 5 pts	Ø	• • • _
• • • • • •		Weekly Friday Q&A	Ø	• • _



•••	Ð	Week11 Lecture 2 - Polarization, Power Apr 8		• • _
• • • • • •	P	Week11Disc2 3 pts	<	• • _
• • • • • •	P	Lab 7 - Magnetic Induction 10 pts	<	• • _
• • • • • •	X	Quiz 8 - Magnetic dipoles and induction Apr 8 5 pts	<	• • • _
•• •• ••		Weekly Friday Q&A	~	• • _

• • • • • •	- We	eek12 - Photons and Atoms	•	+	0 0
• • • • • •	P	Week12 Lecture 1 - Photons Apr 13		v	• • _
• • • • • •	P	Week12Disc1 3 pts		v	• • _
• • • • • •	P	Week12 Lecture 2 - The simplest model of an atom (Bohr atom) Apr 15		<	• • _
• • • • • •	Ð	Week12Disc2 3 pts		©	• • _

•••	Ð	Lab 8 - Polarization	v	• • _
• • • • • •	\$3	Quiz 10 - Photons and Bohr Atom Apr 22 5 pts	v	• • _
• • • • • •		Weekly Friday Q&A	S	• • _

• • • • • •	- W	eek13 - Atoms and wavefunctions (Exam we…	⊘	+	•
• • • • • •	Exa diso	m week - no lab, no HW due, no second cussion		<	• • _
•••	P	Week13 Lecture 1 - Bohr atom & Matter Waves Apr 20		<	• • _
••• •• ••	P	Week13Disc1 3 pts		<	• • _
•• •• ••	P	Exam 3 Apr 22 100 pts		v	• • _
• • • • • •	No	2nd discussion this week - exam grading		~	• • _
••• •• ••	P	Week 13 Lecture 2 - Atomic Physics Apr 24		<	• • _

₩ \$\$	Quiz 11 - Matter Waves and Wavefunctions Apr 29 5 pts	S	• • _
• • • • • •	Weekly Friday Q&A	S	• • _
	eek14 - Atoms to Nucleus	❷ +	0 0 0
∷ 🕑	Week14 Lecture 1 - Three-dimensional atoms and the periodic table Apr 27	<	• • • _
∷ 🕑	Week14Disc2 3 pts	v	• •
∷ 🕑	Week14 Lecture 2 - Nuclear Physics Apr 29	•	• • _
ii 🗗	Week15Disc1 3 pts	?	• • _
•••	Weekly Friday Q&A	v	• • • _







Search for Assignment

+ <u>Group</u>

+ Assignment (https://canvas.wisc.edu/courses/186671/assignments/new)

	ported Assignments	+_ :_
	Chapter 38: Refraction (https://canvas.wisc.edu/courses/186671/assignments/765145) Available until May 15 Due Feb 19 at 11:59pm 30 pts	⊘ :
#₽	Chapter 37, 38: Reflection & Refraction (https://canvas.wisc.edu/courses/186671/assignments/765144) Available until May 15 Due Feb 17 at 1pm 38 pts	• :
∷ ₽	Chapter 24: Electric Fields (https://canvas.wisc.edu/courses/186671/assignments/765134) Available until May 15 Due Mar 2 at 11:59pm 46 pts	S :
	Chapter 35, 36: Diffraction and Interference (https://canvas.wisc.edu/courses/186671/assignments/765140) Available until May 10 Due Feb 5 at 1pm 29 pts	
	Chapter 23: Electric Forces (https://canvas.wisc.edu/courses/186671/assignments/765135) Available Multiple Dates (https://canvas.wisc.edu/courses/186671/assignments/765135) Due Multiple Dates (https://canvas.wisc.edu/courses/186671/assignments/765135) 16 pts	
	Chapter 26, 27: Electric Potential & Capacitors (https://canvas.wisc.edu/courses/186671/assignments/765146) Available until May 15 Due Mar 9 at 11:59pm 31 pts	.
∷ 🗗	Chapter 25: Gauss's Law (https://canvas.wisc.edu/courses/186671/assignments/765142) Available until May 10 Due Apr 30 at 11:59pm 26 pts	⊘ :
#₽	Chapter 27, 29: Capacitors, DC Circuits (https://canvas.wisc.edu/courses/186671/assignments/765133) Available until May 15 Due Apr 30 at 11:59pm 39 pts	⊘ :

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0 0 0 0 0 0 0 0	Ð	Chapter 30: Magnetic Fields & Forces (https://canvas.wisc.edu/courses/186671/assignments/765138) Available until May 15 Due Apr 30 at 11:59pm 32 pts	•	•
• • • • • •	₽	Chapter 31 & 32: Ampere's and Faraday's Laws (https://canvas.wisc.edu/courses/186671/assignments/765137) Available until May 15 Due Apr 30 at 11:59pm 43 pts	0	•
• • • • • •	₽	Chapter 33, 34: Inductors & AC Circuits (https://canvas.wisc.edu/courses/186671/assignments/765136) Available until May 15 Due Apr 30 at 11:59pm 38 pts	0	•
0 0 0 0 0 0 0 0	Ð	Chapter 39: Relativity (https://canvas.wisc.edu/courses/186671/assignments/765139) Available until May 15 Due Apr 30 at 11:59pm 89 pts	0	• •
0 0 0 0 0 0 0 0	Ð	Chapter 40: Quantum Physics (https://canvas.wisc.edu/courses/186671/assignments/765143) Available until May 15 Due Apr 30 at 11:59pm 30 pts	0	• •
• • • • • •	Ð	Chapter 42: Atoms (https://canvas.wisc.edu/courses/186671/assignments/765141) Available until May 10 Due Apr 30 at 11:59pm 26 pts	0	•
	<u>_Qui</u>	zzes	+_	• _

•••	\$\$	Quiz 1 - Waves and interference (https://canvas.wisc.edu/courses/186671/assignments/714016) Week2 - Superposition and interference of Light Module Closed Due Jan 29 at 11:59pm 5 pts	0	• •
• • • • • •	<i>\$</i> 3	Quiz 2 - Light and Thin-film Interference (https://canvas.wisc.edu/courses/186671/assignments/714068) Week3 Diffraction, then ray optics and lenses Module Closed Due Feb 5 at 11:59pm 5 pts	0	• •

 \$3	Quiz 3 - Refraction & Lenses (https://canvas.wisc.edu/courses/186671/assignments/714043) Week4 - Optical Instruments Module Closed Due Feb 12 at 11:59pm 4 pts	
 ŝ	Quiz 4 - Electric Forces and Fields (https://canvas.wisc.edu/courses/186671/assignments/714047) Week6 - Electric Potential and Capacitors Module Available Multiple Dates (https://canvas.wisc.edu/courses/186671/assignments/714047) Due Multiple Dates (https://canvas.wisc.edu/courses/186671/assignments/714047)	
 ŝ	Quiz 5 - Electric Potential and Capacitors(https://canvas.wisc.edu/courses/186671/assignments/714040)Week7 - Electric circuits Module Closed Due Mar 9 at 11:59pm 5 pts	
 ×3	Quiz 6 - Circuits (https://canvas.wisc.edu/courses/186671/assignments/714034) Week8 - Electric dipoles and dielectrics Module Available Multiple Dates (https://canvas.wisc.edu/courses/186671/assignments/714034)_ Due Multiple Dates (https://canvas.wisc.edu/courses/186671/assignments/714034)_ 5 pts	
 \$3	Quiz 7 - Magnetic Flelds and Forces(https://canvas.wisc.edu/courses/186671/assignments/714032)Week10 -Magnetic dipoles and magnetic induction Module Available until Apr 1 Due Apr 1 at 11:59pm 5 pts	
 ×3	Quiz 8 - Magnetic dipoles and induction(https://canvas.wisc.edu/courses/186671/assignments/714031)Week11 - Electromagnetic Waves and Polarization Module Not available until Apr 2 Due Apr 8 at 11:59pm 5 pts	
 *3	Quiz 9 - Motional EMF, EM Waves, & Polarization(https://canvas.wisc.edu/courses/186671/assignments/714055)Not available until Apr 9 Due Apr 15 at 11:59pm 5 pts	
 \$3	Quiz 10 - Photons and Bohr Atom(https://canvas.wisc.edu/courses/186671/assignments/714065)Week12 - Photons and Atoms Module Not available until Apr 16 Due Apr 22 at 11:59pm 5 pts	

0 0 0 0 0 0 0 0	×3	Quiz 11 - Matter Waves and Wavefunctions (https://canvas.wisc.edu/courses/186671/assignments/714037) Week13 - Atoms and wavefunctions (Exam week! Friday Lecture) Module Not available until Apr 23 Due Apr 29 at 11:59pm 5 pts	0	0 0 0
• • • • • •	X3	Lab Quiz (Optics) (https://canvas.wisc.edu/courses/186671/assignments/781903) Due Mar 2 at 11:59pm 9 pts	0	• • •

≝ ▼ <u>Exams</u>	+_	• • _
Exam 1 Q&A (https://canvas.wisc.edu/courses/186671/assignments/714 Week4 - Optical Instruments Module Due Feb 14 at 8:50am	1112) 🕜	•
	0	•
Exam 1 (https://canvas.wisc.edu/courses/186671/assignments/714111) Week5 - Electric forces and fields (Exam week! Friday Lecture) Module I Due Feb 19 at 5:30pm I 100 pts	ø	•
A practice final exam will be added	<u>}</u>	
Image: Final Exam (https://canvas.wisc.edu/courses/186671/assignments/7141 Week 15 - Finals Week Module Due May 3 at 7:45am 125 pts	17) 📀	•