

Syllabus for General Physics 2 (PHYS 114) - Spring 2016

Lecture: Cardwell 103 - T & U - 1:30 - 2:20pm & 2:30 - 3:20pm

Course Objective: This is an introductory algebra & trigonometry based physics course designed to provide you with a basic understanding of Electricity, Magnetism, Optics, Modern Physics, and Nuclear Physics; key branches of science that form the foundations of the physical world that surrounds you every day. Lectures will contain exciting demonstrations that will illustrate concepts and will they will also provide you with the mathematical machinery to solve real world problems. **See the most up to date syllabus on K-State Online, which includes an up to date schedule of exams, including all dues dates of homework, exam regrades, etc.**

Course Instructors:

Lecturer:

Dr. Sean P. McBride[†]
Office: Cardwell 20, 785-532-1639
Office Hours: T 3:30-5:30p, W 4:30-6:30p, & U 11:30-1:30p
Email: seanpm@phys.ksu.edu

Recitation Instructor:

Dr. Gary M. Wysin[†]
Office: Cardwell 309, 785-532-1628
Office Hours: T & U 11-12:30pm
Email: wysin@phys.ksu.edu

Director of Undergraduate Laboratories:

Brandon Lohman[†]
Office: Cardwell 403, 785-532-1605
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Email: bcl6677@phys.ksu.edu

Recitation Instructor:

Dr. Michael J. O'Shea[†]
Office: Cardwell 106, 785-532-1622
Office Hours: M, T, & U 9:00-10:00am
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[†]Mailbox located in Cardwell room 116, the Physics Department main office.

Lab Instructor: Katrina Pritchard, Cardwell 41, W 3:30-4:30pm, pritchkat@ksu.edu

Lab Instructor: Jeremiah Clark, Cardwell 41, W & F 1:30-2:30pm, jeremiahc@phys.ksu.edu

Lab Instructor: Erica Schmitz, Cardwell 41, U 12:30-1:30pm, F 11:30-12:30pm, erica12@ksu.edu

Lab Instructor: Ronald Sastoque-Prieto, Cardwell 41, M & W 10:30-11:30am, ronaldo13@ksu.edu

Enrollment: You must be enrolled for all four of the components for this course: **LEC** (Lecture), **QZ** (Exam), **REC** (Recitation), and **LAB** (Laboratory). If you are missing one of these components and not already wait listed, get on the wait list immediately, then contact the Director of Undergraduate Laboratories. If you have enrollment issues, still complete all the homework and attend all lectures, labs, and recitation until your enrollment status is fixed. Make sure your instructors know who you are if you are not enrolled (so they can record your grades)! Earned grades can be added at a later date as long as your **enrollment is fixed by the end of the 1st full week of classes (Jan. 29th)**. If your status switches to enrolled after **Jan. 29th** and your instructors have no record of previous work, missing assignments count as zeros. Only students officially enrolled after the **2nd week** of classes will receive a grade in the course (**all enrollment issues need fixed by end of day Jan. 29th**).

Credit for Previous Lab Work: Students retaking the course who have successfully completed the lab must contact the Director of Undergraduate Laboratories as soon as possible (**by end of day Jan. 22th**) to get credit for previous lab work.

Individual Help: If you are starting to experience difficulties in this class, there exist numerous resources available for you to obtain additional help. Resolve these difficulties quickly, before they snowball out of control. For your online homework, you are encouraged to first ask your peers for help, your peers (N~240-260) significantly outnumber the instructors (N~6) and they are more available than the instructors. If you cannot get the required help from your peers, ask the instructors in the 'Help Room' (Cardwell 41) for assistance (your specific Lab Instructor has Help Room hours as shown above, see online syllabus for updated times when your lab instructors will be in the Help Room). Any time the Help Room is open and staffed, any Help Room Instructor can **potentially** help you with any introductory physics homework problems. If you're not getting the required help from either of these resources, please see your recitation instructor during their scheduled office hours or make an appointment with them. Of course, if all these resources fail, you are always welcome to visit your lecture instructor's scheduled office hours or simply drop by Cardwell 20 to see if Dr. McBride has additional time to help you. The following website, <http://www.phys.ksu.edu/teaching/>, provides you with up-to-date information such as faculty office hours, information for obtaining a physics tutors, and an up-to-date schedule for the Help Room in Cardwell Room 41 where you can receive free one-on-one help with your physics homework. In addition, some physics graduate students work as paid tutors, a list of these tutors will be provided on the previous website when available.

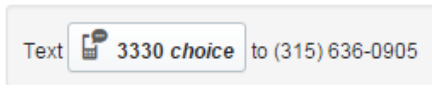
Textbook (required): College Physics, Author: OpenStax, ISBN-13: 9781938168000, ISBN-10 1-938168-00-3, Copyright Year: 2013. Publisher: OpenStax College, (<https://openstaxcollege.org/textbooks/college-physics>)

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- It is strongly recommended that you read the corresponding sections of your textbook that are outlined in the tentative course schedule (at the end of this syllabus) before the lectures. You should certainly read the corresponding sections prior to attempting the homework, labs, and exams. An attempt will be made such that the course material presented in the Tuesday lecture will be used in the Wednesday, Thursday, and Friday laboratories and on the new homework for the week. The lectures are primarily meant (1) spark an interest in the subject, (2) highlight key and often difficult parts of the text, (3) show exciting demonstrations of the concepts discussed in the text, and (4) work through some exciting examples to give you the mathematical machinery to solve problems. Study your book, homework, and labs for the exams and ask questions!

Top Hat Software (required): You should have received an email from **Top Hat** with a message along the lines “*Your professor has invited you to General Physics 2 on Top Hat.*” Join Code: 550427. Please join the course, follow the online instructions for setting up an account, make sure your first and last name exactly match how they appear in K-State Online and also make sure your Top Hat ID matches your Wild Cat ID exactly how it appears in K-State Online. A four month subscription for the course runs only \$29, which will cover this course until May 13th (\$24 for the software platform and \$5 for the newest version of OpenStax College Physics, both are required for the online homework integration). If you have not received this email, double check enrollment status, contact the Director of Undergraduate Laboratories if you have enrollment problems, and contact Dr. McBride to let him know you did not receive an email from Top Hat. At any time if you have an issue with setting up or using Top Hat (including not having a compatible wireless device, see below) you should directly contact Top Hat for the fastest fix. Student support is available by contacting support@tophat.com, <https://support.tophat.com/hc/en-us>, or by calling [888-663-5491](tel:888-663-5491). Your online homework and clicker questions will be administered and graded by this required software (17% of your final grade is based on using this software).

- It is recommended that you keep a bound homework notebook for writing out all the detailed steps when solving the homework problems. The purpose of this notebook is so that you can use it to study for the exams; doing this allows you to keep all your written work in one place. Your online homework will consist of conceptual questions and numerical problems of varying difficulty that you must work through to arrive at a final answer, thus your work will be kept in the notebook and you'll be submitting your final answer to Top Hat. This notebook will **NOT** be graded, only the submitted online final answers will be graded for 12% of your final grade. New Online homework assignments will be posted on Top Hat (www.tophat.com) at 11:59pm on Wednesday and they will be due the following week at 11:59pm on Wednesday (see tentative schedule at the end).

Wireless Device (required): You will need a laptop or smartphone with wireless Wi-Fi communication capabilities to log into your Top Hat account on www.tophat.com during lecture to answer ‘clicker’ questions. An alternative to the laptop or smartphone is any standard cell phone capable of SMS text messaging on a 3G network; these ‘clicker’ questions makeup 5% of your grade (2 points per question - 1 pt. for effort/1 pt. for being correct). Contact support@tophat.com or [888-663-5491](tel:888-663-5491) immediately, before the second lecture, if you do not have either one of these devices. Top Hat will work with you directly to get a set up that works, but you need to contact them immediately. To respond to clicker questions quickly with your phone, you will need to save the **Top Hat** phone number **(315) 636-0905** as one of your contacts in your phone. For each clicker question, in the lower left of each question there will always be a unique 4 number code/identifier, type that 4 digit identifier followed by your choice A, B, C, or D for the multiple choice and then send to Top Hat (see below example, there can be a space or no space between the identifier and your choice, it does not matter). Prior to the second class, figure out how to quickly switch between text and numbers on your phone so you can quickly answer questions. Typically, you will have 60-75 seconds or less to answer.



Lab Manual: The lab manual will be posted in K-State Online. The lab is an integrated part of this course and counts as 20% of your final grade. Policies for laboratory work and lab write-ups guidelines are given in the lab manual. Additional instructions and requirements may be given by your laboratory instructor. If you are more than 20 minutes late for a lab, you will receive a zero for the day; however, you are welcome to stay and work through the lab. Your lab instructor may also change your lab score such that it reflects the work that you have done on the day when you are late; thus, your lab score may be lower than your colleagues score for that day since you were late. There will be **NO** lab makeups. You will only be graded on the best 12 of 14 labs, thus you can receive two zeros for being sick, jury duty, conferences, university sanctioned events in which you are participating, university sanctioned athletic events in which you are participating, funerals, court hearings, you overslept, enrollment issues, or overall just had a bad day, etc, this will not affect your lab score; however, if you miss a total of more than four labs for whatever reason (that is over a month of lab) **you automatically fail the course with an "F"**. If you know well in advance you will unavoidably have to miss a lab for a legitimate reason, which is fine, contact your lab instructor immediately so that other arrangements will attempted to be made so you can attend a different lab section; no guarantees, but we will try and work with you if you can provide proper documentation of the event well in advance. Your laboratory instructor is also responsible for resolving any grading disputes with the grades corresponding to laboratory following the 1-week rule (see below); bring these lab grade concerns to your lab instructor, **NOT** the lecture or recitation instructors.

Exams: There are five exams during the semester plus a final exam. On the Sunday before each exam and the final, there will be a review session held by one of the recitation instructors (from 7-9pm in Cardwell 103). The best four of your five exam scores will count for 40% of your overall grade. Makeup exams will be given only in very rare extraordinary circumstances all of which require extensive documentation. Any exam conflicts need to be brought to the attention of the Lecture Instructor at least 2 weeks before the exam (check the tentative schedule at the end of this document for all exam dates now). In the event of an emergency, make email contact with the Lecture Instructor as soon as possible; you must give your reason for missing the exam in the email. A missed exam, with no prior email and no legitimate supporting documentation before or after the exam, counts as a zero and cannot be made up. Exams are given in CW 101, 102, and 103 at 5:30-6:45 pm on the Mondays shown on the schedule in K-State Online. Exams will typically contain a mix of written and conceptual problems that will be similar (but not identical) to homework problems, laboratory problems, lecture material, book example problems, and/or lecture demos. The conceptual questions will be in multiple-choice format, which you will record on scantron cards during the exam for grading (all graded materials in this course require your real name that matches your KSOL enrollment identity, no nicknames). See also the document "**How to write-up my physics solutions on homework and exams?**" on K-State Online (KSOL) to get the most points on the written portion of the exams.

The exams are closed-book, closed-note, and no equation sheets will be provided; however, you can make your own equation sheet on a 5"x 8" index card (You must supply you own calculator and your own 5"x8" card for the exams).

- **No scanned/printed items, equations, figures, or tables, or scanned versions of previously handwritten index cards are allowed on your equation sheet.**
- **For each exam, you are only allowed just one front and back of a 5"x 8" handwritten equation sheet.**
- Your equation sheet can only contain **handwritten** equations, **handwritten** diagrams, and **handwritten** figures. Everything must be originally **handwritten**!!
- **Only** use the front and back of a 5"x 8" index card; use of **other sizes will result in a zero for the exam (measure them!!)**. This must be a **5"x 8"** index card, NOT just a ½ sheet of paper.
- When turning in your exam, you will be required to staple your index card to the last page of your exam for inspection. **Failure to turn in your index card for inspection will result in a zero for the exam.** If you chose to not use an index card, you must still staple a blank 5"x 8" index card to your exam or you will receive a zero.
- **During the exams, proctors will be specifically looking for index cards that violate these above rules; you must make your cards clearly visible to the proctors. If your card violates any of these rules you will be asked politely to turn in your exam and leave quietly (your exam grade is most likely a zero at this point; however, the severity of additionally penalties like academic dishonesty charges is dependent upon you successfully leaving the exam quickly and quietly when asked to politely to do so). Again, you may only have one 5"x 8" index card.**
- You will receive your exams back on the Thursday of the same week you took the exam. Pick these exams up in from the sorting box in the front of the lecture hall. For exam grading disputes, follow the policies outlined in the 1-week rule (see below sections). After 1-week, grades are permanent. Your recitation instructor will be the only one responsible for your exam regrades, do **NOT** bring your exam regrades to your lab or lecture instructors.

Course Web Site: Important course information such as exam grades, lab grades, homework grades, clicker question grades, announcements, lecture notes, and so-on will be posted on the course web site, accessed through K-State Online. Sign in at <http://www.k-state.edu/> in the upper right corner using your eid and password.

The Final Exam: Comprehensive, mandatory, and makes up 15% of your final grade in the course. If an exam conflict exists with the scheduled final exam time, follow the steps outlined in section (F71) of the University Handbook <http://www.k-state.edu/provost/universityhb/fhsecf.html>. All the same rules for your final exam equation sheet will be the same as for the regular exams, except now you can have an entire **8.5"x11" sheet of paper, front and back, all handwritten**, which must be stapled to your final exam for inspection. No regrade opportunities will be allowed for the final exam.

The 1-Week Rule and Exam Regrades: Any grading dispute for the online homework, written homework in recitation, laboratories, and/or exams, needs to be brought to the attention of the corresponding instructor within one week (or other specified time given by the lecture instructor) of when the grades were distributed or made available to the entire class. For exams, if you have a grading dispute: On a separate sheet of paper, write down what problem numbers you want regraded and why you think you deserve more points for these problems, or point out where the grading error(s) exist (be specific and detailed in your explanation, if you simply just write down the problem number, your recitation instructor will not regrade it, also do **NOT** redo the problem!!). Staple this sheet of paper on the back side of the exam and give this to your recitation instructor. Your exams will be given back on the Thursday of the week when the exam was taken. Regrades are due at the **beginning** of recitation on the following Wednesday (see the most up to date schedule on K-State Online or tentative schedule on the end of the syllabus of when assignments/regrades are due). Your recitation instructor will keep the sheet you stapled to the exam for their records.

Homework and Recitation: Homework counts for 20% of your final grade. Homework extensions are only given in very rare extraordinary circumstances all of which require extensive documentation. There will be one assignment per week, which will have two components: online homework (12% of your final grade) and written (8% of your final grade). The online homework is provided and graded by the Top Hat web-based instruction system. The written homework will be handed out and completed in your recitation section in groups of your peers and graded by your recitation instructor. Solutions to both the online and written homework will be posted on K-State Online after they are submitted and collected. See also the document "**How to write-up my physics solutions on homework and exams?**" document on K-State Online to get the most points on your written and online homework (significant figures are very important, especially for the online homework).

- The purpose of recitation is **NOT** to show up with the intent of getting your recitation instructor to provide the solution to your online homework. Your recitation instructors will help your group (or the class) work through a problem, address any conceptual difficulties, and/or help you overcome any mathematical challenges, but they will not simply write the solution on the board. The first ~15 minutes of recitation will be devoted to addressing questions from the online homework that your group (or the entire class) may have. The next ~35 minutes will be devoted to solving a new written problem that you will work on in small groups. There will be **NO** written homework makeups; however, only the best 13 of 15 will be recorded, thus, just like in lab, you can miss up to two written assignments for whatever reason. If you are more than 20 minutes late for recitation, you receive a zero for the day. The recitation session should be used for clarification of concepts, but for the most part your online homework should be done before recitation.
- Groups in recitation will ideally consist of no more than four people. Everyone in the group will turn in their written assignment, with their name first, then followed by all their group member names on it underneath their name (failure to do this will result in a zero for everyone in the group). One person from each group will be selected to be graded each week. Everyone in the group gets the same grade. An effort by the recitation instructor will be made to make sure each person gets graded the same number of times throughout the semester. Groups will remain the same between exams. After each exam, the groups will be re-arranged by your recitation instructor. Group assignments must be turned in at the end of recitation. No late assignments will be accepted after recitation. You must attend recitation to get a grade.
- **Online Homework** - You should have your online homework assignment nearly completed and worked out as best you can before the Wednesday recitation class each week (by Wednesday recitation you will have had 6 days to work on it). The software will allow submitting and changing your answer as many times as you want in that one week, but whatever answer you have logged in at 11:59pm on each Wednesday, that will be the answer that is graded. Remember, significant figures are very important for the online homework, be careful in your calculations. The software will not tell you if you are correct or wrong until after the homework is due. I encourage students to work together on the online homework and talk with each other if you arrive at different answers. If you think the answer you got is correct and you are confident in your solution, try and explain it to your fellow students, see what they think. Maybe they solved the problem a different way, arriving at a different answer, encouraging you to review and rethink how you solved the problem. Hopefully this encourages discussion of physics among you and your fellow students and builds your confidence in problem solving and improves your ability to explain your work to others. **If you are having extreme difficulties with the online homework, see the 'Individual Help' section on the first page of this syllabus.**

Determination of Final Grade:

900 points or above:	A
800-899 points:	B
700-799 points:	C
600-699 points:	D
599 or lower:	F**

** A passing grade in the laboratory is required to pass the course (if you fail the lab, 59% or lower, you automatically fail the course with an "F"). You must take the final exam (not taking the final exam results in an automatic "F" in the course). If you miss a total of more than four labs (that is over a month of lab) you will automatically fail the course with an "F".

Distribution of Points:

In Class Exams (Best 4 of 5)	100 points per exam	400 points	40%
Labs (Best 12 of 14)	15 points per lab, scaled to 200 points	200 points	20%
In Class Final Exam	150 points	150 points	15%
Online Homework (14 Total)	10-30 points per Hwk, scaled to 120 points	120 points	12%
Group Recitation Assignments (Best 13 of 15)	10 points per Assignment, scaled to 80 points	80 points	8%
In Class Clicker Questions (3-5 per Lecture; 2pts each)	(1 pt. for effort/1 pt. for correct) scaled to 50 points,	50 points	5%
Total:		1000 points	100%

Authorized vs Unauthorized Aid in Academic Work for this Class: In this course, you are permitted to talk with other students about your Online homework problems and even encouraged to work together in groups on the homework, but you may not copy solutions or answers from any other source. **You must work the problems for yourself and understand them.** Remember, **55%** of **your** final grade is based on how **you**, and only **you**, can answer questions on the **individual exams** (Exams, 40% and the final, 15%). Copying something and not understanding it does you no good. Policies for laboratory work and write-ups are given in the lab manual. If you have any questions about what constitutes authorized and unauthorized aid, contact the Lecture Instructor immediately.

Statement Regarding Academic Honesty: Kansas State University has an Honor and Integrity System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor and Integrity System. The policies and procedures of the Honor and Integrity System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The Honor and Integrity System website can be reached via the following URL: www.k-state.edu/honor. A component vital to the Honor and Integrity System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

Students Requiring Special Accommodations & Statement Regarding Students with Disabilities: If you have any condition which will require any sort of special accommodations, as soon as possible, please notify the Lecture Instructor, Lab Instructor, Recitation Instructor, Director of Undergraduate labs, and contact the Student Access Center office (<http://www.k-state.edu/accesscenter/>). Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-state.edu, 785-826-2649.

Statement Defining Expectations for Classroom Conduct: All student activities in the University, including this course, are governed by the Student Judicial Conduct Code (<http://www.k-state.edu/sga/judicial/>) as outlined in the Student Governing Association By Laws, Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class. By Laws available at: (<http://www.k-state.edu/sga/documents/sgadocs/ByLaws.pdf>)

Statement for Copyright Notification: Copyright (2016) - Dr. Sean P. McBride as to this syllabus and all lecture material. During this course students are prohibited from selling notes to or being paid for taking notes by any person or commercial firm without the express written permission of the Instructor teaching this course.

W #	L #	Date	Subjects	Chapter - (Sections) Required Reading	Lab of the Week
1	1	Tue, Jan 19	Introductions, Review Syllabus, Electric Charge, Coulomb's Law, & the Electric Field	Ch. 18 - (1-4)	Electrostatic Phenomena
		Wed, Jan 20		Written Hwk 1 Due	
2	2	Thu, Jan 21	Test Clicker Responses, Electric Field and Field Lines, Multiple Charges	Ch. 18 - (5-8)	Equipotential and Electric Fields
	3	Tue, Jan 26	Guest lecturer:Dr. O'Shea. Electric Potential and Potential Energy, end Equipotentials	Ch. 19 - (1-4)	
3		Wed, Jan 27		Written Hwk 2 Due & Online Hwk 1 & 2 Due	Capacitors
	4	Thu, Jan 28	Syllabus Clicker Test Q's, Capacitors and Dielectrics: Series, Parallel, and Stored Energy	Ch. 19 - (5-7)	
5	5	Tue, Feb 2	Current & Resistance: Ohm's Law	Ch. 20 - (1-3)	Capacitors
		Wed, Feb 3		Written Hwk 3 Due & Online Hwk 3 Due	
	6	Thu, Feb 4	Electrical Power and Energy Units	Ch. 20 - (4)	
Mon, Feb 8					Exam 1- 5:30-6:45pm
4	7	Tue, Feb 9	DC Circuits & Kirchoff's Loop Rules & Basic Circuit Components	Ch. 21 - (1-4)	Electrical Power and V=IR
		Wed, Feb 10		Written Hwk 4 Due & Online Hwk 4 Due	
5	8	Thu, Feb 11	RL and RC Circuits Using DC	Ch. 21 - (5)	Currents and Magnetic Fields
	9	Tue, Feb 16	Magnetic Fields and Forces in Matter	Ch. 22- (1,3-5)	
6		Wed, Feb 17		Exam 1 Regrades Due This Week in Recitation Written Hwk 5 Due & Online Hwk 5 Due	Electromagnetic Induction
	10	Thu, Feb 18	Solenoids & Electromagnets, Torques on Current Loops, Ampere's Law	Ch. 22- (2, 7-11)	
7	11	Tue, Feb 23	Faraday's Law, Electromagnetic Induction, Introduction to AC circuits	Ch. 20/23- (5-6)/(1-4)	Electromagnetic Induction
		Wed, Feb 24		Written Hwk 6 Due & Online Hwk 6 Due	
	12	Thu, Feb 25	Inductance, Motors, Transformers, and Generators	Ch. 23- (5-9)	
Mon, Feb 29					Exam 2- 5:30-6:45pm
7	13	Tue, Mar 1	AC Circuits & Kirchoff's Loop Rules & Basic Circuit Components	Ch. 23- (10, 11)	AC Circuit Lab
		Wed, Mar 2		Written Hwk 7 Due & Online Hwk 7 Due	
8	14	Thu, Mar 3	RL, RC, and RLC Circuits Using AC	Ch. 23- (11, 12)	Diffraction and Interference
	15	Tue, Mar 8	EM Waves, Interference and Diffraction	Ch. 24/27- (1-4)/(8)	
9		Wed, Mar 9		Exam 2 Regrades Due This Week in Recitation Written Hwk 8 Due & Online Hwk 8 Due	Diffraction and Interference
	16	Thu, Mar 10	Light Waves and Polarization, Scattering	Ch. 27- (1-7)	
Spring Break					
		Mon, Mar 14			
		Wed, Mar 16			
		Fri, Mar 18			
Mon, Mar 21					Exam 3- 5:30-6:45pm
9	17	Tue, Mar 22	Concave and Convex Lenses, Light Rays, Snell's Law, Reflection, TIR	Ch. 25- (1-6)	Ray Tracing
		Wed, Mar 23		Written Hwk 9 Due & Online Hwk 9 Due	
10	18	Thu, Mar 24	Images by Refraction: Concave and Convex Mirrors	Ch. 25- (7)	The Eye and Lenses
	19	Tue, Mar 29	Optical Instruments and Vision	Ch. 26- (1-6)	
11		Wed, Mar 30		Exam 3 Regrades Due This Week in Recitation Written Hwk 10 Due & Online Hwk 10 Due	The Eye and Lenses
	20	Thu, Mar 31	Optical Instruments and Vision	Ch. 26- (4-6)	
Mon, Apr 4					Exam 4- 5:30-6:45pm
11	21	Tue, Apr 5	Intro to QM, Photoelectric Effect, Photon Energy, and Momentum	Ch. 29- (1-4)	The Photoelectric Effect
		Wed, Apr 6		Written Hwk 11 Due & Online Hwk 11 Due	
12	22	Thu, Apr 7	Matter Waves, Uncertainty Principle, Wave Particle Duality, & Short Video	Ch. 29- (5-8)	Atomic Emission Spectra
	23	Tue, Apr 12	The Atom, The Bohr Model of Hydrogen, & Excited States	Ch. 30- (1-3, 5)	
13		Wed, Apr 13		Exam 4 Regrades Due This Week in Recitation Written Hwk 12 Due & Online Hwk 12 Due	Atomic Emission Spectra
	24	Thu, Apr 14	Causes of Quantization and the Pauli Exclusion Principle	Ch. 30- (6, 9)	
Mon, Apr 18					Exam 5- 5:30-6:45pm
13	25	Tue, Apr 19	Nuclear Physics and Radioactive Decay	Ch. 31- (1-4)	Tour of KSU Nuclear Reactor!
		Wed, Apr 20		Written Hwk 13 Due & Online Hwk 13 Due	
14	26	Thu, Apr 21	Half-Life, Decay Rates, Activity, and Binding Energy	Ch. 31- (5-7)	Radiation
	27	Tue, Apr 26	Medical Imaging, Diagnostics, and Ionizing Radiation	Ch. 32- (1-4)	
15		Wed, Apr 27		Exam 5 Regrades Due This Week in Recitation Written Hwk 14 Due & Online Hwk 14 Due	Radiation
	28	Thu, Apr 28	Nuclear Energy Fission, and Fusion	Ch. 32- (5-7)	
15	29	Tue, May 3	Special Relativity and Time Dilation and Length Contraction	Ch. 28- (1-3)	(No Lab)
		Wed, May 4		Written Hwk 15 Due & Online Hwk 15 Due	
	30	Thu, May 5	Relativistic Velocities, Momentum, and Energy	Ch. 28- (4-6)	
Tues, May 10					Final Exam 6:20-8:10pm

Version 4.0 - 1/15/2016

This is a tentative schedule and syllabus; guidelines, rules, policies, and due dates can be subject to change at any time throughout the semester. We will try to stick as close to the policies and schedule presented here. The most up to date schedule with up to date policies can be found on K-State Online.

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