Syllabus for Physics 132: Classical Physics II (Fall 2018) at Stony Brook University

(as of 8/31/18; the last previous update was 8/28/2018)

From the Undergraduate Academic Bulletin

Second part of a two-semester physics sequence for physical-sciences or engineering majors who have a strong mathematics background and are ready for a fast learning pace. It covers electromagnetism, electric circuit theory, and optics. Calculus is used concurrently with its development in MAT 132. Three lecture hours and one recitation hour per week. The Laboratory component, PHY 134, may be taken concurrently. Not for credit in addition to PHY 122, PHY 127, or PHY 142. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so. Class Number: 80578

Prerequisite: C or higher in PHY 131 or PHY 141

Corequisite: MAT 132 or MAT 142 or MAT 126 or MAT 171 or AMS 161

DEC: E. Required grade: A through D ***SBC:*** SNW Study the Natural World 3 credits

Learning Outcome

Students will use calculus and algebra to study electricity, magnetism, DC circuits, AC circuits, electromagnetic waves and optics.

Academic Integrity (individual responsibility of each student)

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic integrity website at http://www.stonybrook.edu/commcms/academic_integrity/index.html .

Academic dishonesty will not be tolerated. In this course, the standards are as follows: In lecture, whenever a ``clicker" question is posed, you may discuss "the physics" with neighbor(s) who agree to do so in the very brief time available, but you may NOT ask for an answer. **One person operating two or more clickers is cheating and will result in an Academic Dishonesty complaint being submitted by the instructor(s) to the Academic Judiciary against the owners of all involved clickers.** You may discuss with your colleagues (other students or Help Room faculty and TA's) "the physics" of assigned homework problems, but you should not ask to be given nor give to others actual solutions to those problems. Such collusion hurts both parties by answers being submitted that at least one or more students do not understand. In an exam in a lecture hall or a quiz in a recitation section, copying answers from another person or use of materials or communication other than what is allowed by the instructors will result in a claim of Academic Dishonesty being filed against you with a recommendation that the penalty be a final grade of **F** in PHY 132. The Academic Judiciary makes the final decision on what penalty(ies) will be applied.

Usernames (also called Userid's) you should use in this PHY 132 Fall 2018:

1. For Blackboard: keep the Username you already have. Every enrolled student at Stony Brook University has a 9-digit Student ID and a username that he/she chose (or will choose if he/she has never enrolled here before).

2. Both for MasteringPhysics and for TurningTechnologies (clickers): If **your last name** has only 2 letters (e.g., Li) or 3 letters (Mei) or 4 letters (Pell) or 5 letters (Chung), use all 2 or all 3 or all 4 or all 5 letters, respectively, and, with **no spaces**, follow them with the **last three numbers** of your 9-digit Stony Brook ID. If Li's Stony Brook ID number is 123456789, the username **should be** Li789. If Mei's Stony Brook ID number is 987654321, the username **should be** Mei321. If Pell's Stony Brook ID number is 987632154, the username **should be** Pell154. If Chung's Stony Brook ID number is 123789567, the unsername should be Chung567. If Kowalski's Stony Brook ID number is 123567489, the username **should be** Kowals489, etc.: no more than 6 letters but always 3 numbers.

3. If you want to use the same username you used in a previous semester, you **cannot** use it for MasteringPhysics or

TurningTechnologies for PHY 132 Fall 2018. You must use the username that the item 2 procedure specifies. If you have already entered usernames for MasteringPhysics and/or Turning Techologies that do not follow the item 2 procedure, you must change those two usernames to conform to the item 2 procedure.

Lecture: MWF, Harriman Hall 137, 11:00-11:53 am (Lectures will begin and end sharply on time)

Peter Koch: Peter.Koch@stonybrook.edu. Office: D-144 (on the "bridge" between the D-level of the physics building and the math tower). Always try email first, don't "text". The phone 632-8142 should be the last resort.

Recitation sections (start meeting the 2nd week of classes)

R01 (Mon, 4:00-4:53 pm; room: Physics P130; recitation instructor Peter Koch)

R02 (Tue, 3:00-3:53 pm; room: Physics P112; recitation instructor Clark McGrew)

R03 (Fri, 12:00-12:53 pm; room: Harriman Hall 111; recitation instructor Dalimil Mazac)

~~R04 (Thurs, 3:00-3:53 pm, room: Physics P112; recitation instructor TBA)~~ Cancelled with students merged into other sections

Recitations will not meet during the first week of classes. Because of the Labor Day holiday, R01 will not start meeting until the third week. Since ~ 10^2 enrolled students cannot receive significant individual attention during lectures in Harriman 137, the course includes four (perhaps fewer) recitation sections. They are taught by faculty and are typically focused on helping students to understand and gain skills for completing homework assignments. Quizzes prepared and graded by the recitation instructor will be used to determine the student's recitation grade. (Expect a quiz every week!) Recitation sections will give time for going over certain administrative details for the course and for refreshing certain mathematical skills such as trigonometry, the use and manipulation of vectors and the use of elementary differential calculus and some integral calculus. These will be crucial for PHY 132.

Each student should be sure that s/he understands how the recitation instructor will determine the ``recitation grades". The lowest two quiz grades for each student will be dropped, i.e., not used in the calculations of quiz-grade averages. Average quiz scores will be compared among the recitation sections and *normalized* if they are found to have inconsistent means. Normalization is not ``curving" since the average scores will be brought to the same mean as one another without an overall shift to the class as a whole.

Course Organization

Preparation by you is crucial for success!

The one-page Schedule Calendar for PHY 132 is the last page of this Syllabus and available via the link in the upper-left "gray" area of the Blackboard PHY 132.01 (R01-R04) home page. In 15 weeks the course will cover most of Chapters 21-35 of the textbook. That fast pace – an average of one chapter per week – means it's in your best interest to read carefully the material in each chapter before you attend the lectures covering it. "Carefully" takes hours, not minutes. Around 15 to 20 online homework problems from each chapter – some relatively short and at least a few significantly longer -- are assigned each week via MasteringPhysics servers with a rigorous deadline of 10:00 pm on Saturday of the week when the relevant chapter was completed in lecture. Don't wait until the last minute to work on an online homework assignment. "But I didn't have enough time to do it!" will not gain you an extension: Plan ahead!

Doing all the homework yourself is crucial for success in PHY 132. If you copy solutions (from friends, the internet, wherever), you will not learn the material. **We know from past semesters that not doing homework yourself is the main ingredient in a recipe for getting a poor grade!** You cannot master the course material if you do not do the homework yourself. The first lecture will present data that support the statement in the previous sentence.

Lecture

Attendance is required and will be enforced with clicker questions that contribute to your final grade. In all lectures the first clicker question will appear on the projector screen **promptly** at 11:00 AM in Harriman Hall room P-137 and be over

before 11:01 AM. Each lecture will end no later than 11:53 AM. Lectures are a mixture of projected slides, short videos and/or live demonstrations, and "clicker questions" that measure your understanding of textbook material you should have read carefully **before** the lecture so that you are able to keep up with the instructor's lecture. "Worked Example Problems" (most are chosen from the textbook) will be presented step-by-step in lecture to emphasize both physical concepts and problem-solving techniques. Our textbook is very strong in this regard; every chapter has such worked-example problems highlighted in red. Exam problems in PHY 132 have been and will be based on, e.g., worked-example problems, MasteringPhysics homework problems, clicker questions, and live or video demonstrations.

Each lecture will be audio-video recorded using the *Echo360* system that captures two streams and makes them available to you via Blackboard within two hours after that particular lecture ends. One stream records what is projected on the screen in the lecture hall. The second stream projects the whole front wall of the hall, which includes the chalkboards, projector screen, and table in the front of the screen, and the lecturer. Each student will be able to access each two-stream, video recording as many times as is desired via the "Echo" link on our PHY 131.01 (R01-R04) Blackboard website. In addition, the pdf file of projected slides for that lecture will be posted (usually by 1:00 pm on the same day) in the "Documents" section) of our PHY 131.01 (R01-R04) Blackboard site.

Blackboard sites

The Blackboard site PHY 132.01(R01-R04) is the only one that all PHY 132 students and faculty can access; that is its purpose. Each PHY 132 student has another Blackboard site for this course, viz., the site for his/her recitation section, which is either PHY 132.R01, PHY 132.R02, PHY 132.R03, or PHY 132.R04. Each of these Blackboard sites will be maintained by the recitation instructor. Your grades for the weekly recitation-section quizzes will be put into the Blackboard gradebook for your recitation section site. They will **not** be put week by week into the gradebook for the PHY 132.01 (R01-R04) Blackboard site that serves all PHY 132 students. The total number of quiz-related points for each student will be uploaded at the end of Fall 2018 classes into the respective recitation-section Blackboard gradebooks.

Help Room (A-129 physics building)

Course instructors (including recitation instructors) will have scheduled office hours in room A-129 in the physics building. ``Your" Help Room, A-129, serves students in the courses PHY 131, 132, 133, and 134, and PHY 125, 126, and 127. (The other Help Room, A-131, serves students in PHY 121 + 123, PHY 122 + 124.) The schedule (Monday-Friday during most workday hours) for the A-129 Help Room will be posted electronically on the PHY 132.01 (R01-R04) Blackboard site and physically on the A-129 door by the second week of classes. Make sure you take advantage of the **free** assistance the Help Room provides before you find yourself getting into trouble in PHY 132 and then, maybe, are considering hiring a tutor. **Take the textbook with you to Help Room!** **Do not come to the Help Room unprepared**. Expect the Help Room staff to start out by asking you to explain, in detail, the ``preparation by you" (see above!) that you did before coming to the Help Room to seek help. Do not expect them to help you on homework problems that you have neither looked at nor attempted. It's your job to be prepared by ``knowing what you don`t understand`` before you come for help. If you arrive unprepared you will be wasting both your time and the time of the faculty and other helpers in the Help Room.

Required Material (individual responsibility of each student)

1. If you still have access to MasteringPhysics because you purchased 1 full year access to it and the etext version of the text book when you took PHY 131 last semester (Spring 2018), ignore item 2 just below here.
2. This item 2 is for students who never had or no longer have access to MasteringPhysics. Go to https://www.bkstr.com/sbuweststore/home to purchase the "bundle" (i.e., combination costing about

$82.25) of the digital (etext) version of the textbook *Physics for Scientists and Engineers*, 4th edition, by D. Giancoli and the "Access Card" that gives you the license to use the MasteringPhysics online homework system. After clicking the link 3 lines above this line, hover your mouse cursor over BOOKS and click Textbooks & Course Materials. Then, under Program, click Stony Brook University. Next pull down under Term and click Fall 2018. Then under Department, click PHY, and follow that under Course by pulling down to click 132. Now click Submit to arrive at the Course Materials web page for our course PHY 132. This allows you to purchase the bundle of MasteringPhysics and access to the etext version of the textbook.

3. You must then set up your online Mastering Physics account to register your access code. Go to http://help.pearsoncmg.com/integration/cg/blackboard/student/en/content/get_started.htm and on that web page click the link at line 2. to arrive at http://help.pearsoncmg.com/integration/cg/blackboard/student/en/content/register.htm . Read carefully to follow the instructions. **Ignore the bullet point "Section instructors:"**. Seven lines below is the payment option "Opt out:" that applies to you. Three lines below that make sure to click the link numbered 2 to "Open the "MyLab or Mastering course." Follow the instructions.
4. During the semester connect to the MasteringPhysics assignments for this PHY 132 Fall 2018 course via the Link to Pearson's MyLab & MasteringPhysics in the dark gray area at the upper left corner our Blackboard website: PHY 132.01 (R01-R04). After all the above, test to see if your Blackboard account and Pearson account are properly linked. On the "Pearson's MyLab & Mastering" web page on Blackboard, click the "Pearson eText" icon. If that takes you to the Giancoli, 4th edition etext, it's working. Another test is to see if clicking on the "Mastering Assignments" icon takes you to another web page that has the "Introduction to MasteringPhysics" assignment that many of you probably worked through at the beginning of PHY 131. If you need a refresher on MasteringPhysics syntax and want to earn up to 22 extra points, do the "Introduction" assignment. It went "live" at 6:30 pm on 8/11/18. The deadlline is 10 pm on Friday, 8/31/18.
5. If you wish to have a printed version of the textbook, go to the link http://www.mypearsonstore.com/bookstore/mastering-physics-print-offer-for-physics-for-scientists-9780135191590 . This special offer for a looseleaf (3-hole paper) version of the textbook is available for a very reasonable price, currently $44.97 with free ground shipping. The color pages in both the etext and looseleaf versions are identical to those in the much more expensive hardcopy textbook. I strongly urge you to consider the looseleaf version because the etext version prevents you from seeing an entire page with reasonable resolution on a a laptop screen, which is much wider than it is high (width:height = 16:9), whereas printed pages are much higher than they are wide. Laptop screens are "landscape" view and, therefore, not good for printed pages, which need a "portrait" view.
   If you do buy the looseleaf version, keep it forever! The first college-level physics textbook you go through chapter by chapter will be the physics textbook you always grab from your bookshelf in future years "to refresh your physics memory" on some kind of physics-related problem. This is the book you "will know."
6. Most PHY 132 Information, e.g., this Syllabus, is distributed via Blackboard. Check our PHY 132.01(R01-R04) Blackboard site daily! Announcements posted on Blackboard are also emailed verbatim to all enrolled students, to the lecturer, and instructors in recitation sections. It is University policy (http://it.stonybrook.edu/news/articles/use-of-email-for-official-communication-policy-coming-this-fall) that all course-related and other University email be sent to students at their official University email address: firstname.lastname@stonybrook.edu . It is your responsibility as a student to check your email at least once per day at this address. If you send email to the lecturer and/or recitation instructor, you must use your University email address not some other ``personal" email address.
7. You need to have a calculator you know how to use well. If it is able to store forumlas, all memories must be cleared

before you bring such a calculator into an exam room. You use your calculator to calculate, **not** as an electronic formula sheet during exams. Your calculator should have the normal array of mathematical operations used in physics problems. Use the same calculator for homework, exams, and recitation-section quizzes. Use of a smart-phone calculator for an exam or recitation-section quiz is **not** allowed. Violation of this rule will lead to a reduction in grade of the exam or quiz.

8. **Use of clicker devices in PHY 132**: Students must use a TurningTechnologies (TT) response pad (clicker device) having a valid registration throughout the Fall 2018 semester. Registration of its 6 hex-digit clicker device ID can NOT be done without a paid-up account, which has 8 hex-digits. Students can NOT use a TT App ("Response-ware") running in an IOS or Android smartphone. Responses using that App for answering "clicker questions" will NOT work in PHY 132 (Fall 2018). You must use the TT clicker device.
    a) For obtaining or updating your account and/or registering your clicker device, gain access to TT via the PHY 132.01(R01-R04) Blackboard site. Next, in the gray area in the upper-left corner of that site, click Tools. On the "Tools" web page, click "Turning Account Registration (clickers)", and then finish logging in by entering your NetID and NetID Password. This should take you to a TT page. Read the information there, and follow the instructions that apply to your situation.
    b) Existing user of a TT clicker device, say, in PHY 131 (Spring 2018) or in a previous semester at Stony Brook University: Check your TT account. Make sure your subscription has not expired and your device is registered for the Fall 2018 semester. If it expired, you must purchase a new subscription to go with your clicker. If you already registered it through Blackboard for another class at Stony Brook University (Fall 2018), you do not have to register it again.
    c) New user in PHY 132 (Fall 2018) needing to create a TT account must gain access to TT by the procedure given in item 8a): Purchase a TT bundle that includes a QT2 clicker device and subscription that allows you to register your QT2 device. Follow the instructions, but ignore anything about the "TurningPoint App." It is each student's responsibility get a subscription (license code) at his/her expense and use it to register his/her clicker via Blackboard. see the TurningTechnologies icon in the "Tools" section of Blackboard for our course. You should do this before the first PHY 132 lecture. **The course faculty cannot do this for you.** Make sure you take your clicker with you to all lectures.

Clicker Questions

Clicker questions are an important. The second slide projected in each lecture is the attendance question "Are you here?" worth 1 clicker point. If you arrive late to a lecture and miss that question, you don't earn the point. Occasionally clicker questions will be used for the instructor to learn more about you as students, your backgrounds, your academic strengths and weaknesses at this point of your career, and other such information. That is why you must come to the first lecture with your clicker properly registered. All answers (but not absent answers) to ``**first-day**" questions will count toward your overall clicker score. Unless you are explicitly told otherwise, expect that all ``physics-based" clicker questions **during the rest of the semester** will be ``for credit", with credit given only for correct answers. For each student the **lowest clicker scores**, in aggregate, for each of five different lectures, will be dropped. That's the good news. The bad news is that no excuse will allow you or any other student to have more than five lecture-aggregated scores dropped – not forgetting to take your clicker to lecture, not having a weak battery in it, not arriving late nor leaving early, or not attending at all for whatever reason: nothing. It's up to you to make sure that your clicker is properly registered and is functioning properly. Please do this right away, before the first lecture! The table below shows that clicker scores contribute 10% toward your final grade. Be sure to read **carefully** the section on p. 1 of this Syllabus called **Academic Integrity**!

Grades

Final grades will be calculated based upon contributions (MT = midterm exam; FE = final exam; Rec = recitation section; HW = homework; Clickers = a "response pad" from TurningTechnologies) weighted by the following percentages:

	MT1	MT2	FE	Rec	HW	Clickers
Percentage	15	15	30	15	15	10

Your final score based upon the weightings listed above will be compared to the following scale to determine the letter grades. Note that grades are not "curved" in PHY 132 and, below, that, e.g., 90$^-$ ("ninety-superscript-minus") means just below 90.00 (to 4 significant figures, e.g., no higher than 89.99), etc.

	A	A-	B+	B	B-	C+	C	D+	D	F
Percentage	90-100	85-90$^-$	80-85$^-$	75-80$^-$	70-75$^-$	65-70$^-$	55-65$^-$	50-55$^-$	45-50$^-$	< 45

You will be able to monitor your progress in the course via Blackboard.

Recitations

Each student should be sure that s/he understands how the recitation instructor will determine the ``recitation grades". The lowest two quiz grades for each student will be dropped, i.e., not used in the calculations of quiz-grade averages. Average quiz scores will be compared among the recitation sections and *normalized* if they are found to have inconsistent means. Normalization is not ``curving" since the average scores will be brought to the same mean as one another without an overall shift to the class as a whole.

Exams ** (Exam dates and times were incorrect; those just below here are correct)

(MT1 (on 10/4/18) and MT2 (on 11/8/18) will be EVENING EXAMS (8:45-10:15 pm).
The Final Exam (it covers all chapters, 21-35) is 11:15 am - 1:45 pm, Friday, 14 December 2018.

** You are responsible for ensuring that you can attend all exams at their scheduled times. No excuses will be allowed for any foreseeable circumstance. An important part of your ``Preparation by you" duties at the beginning of the semester is to make sure your own life schedule will allow for an orderly adherence to the Schedule Calendar for PHY 132. Check with Professor Koch, "**now, not later**" if you have any questions about this policy.

You **must** have your University ID card face-up on the desktop for all three, lecture-hall exams; see the ``Schedule Calendar" on Blackboard. All three are ``closed book" but ``limited notes". Each student will be permitted to prepare his/her own handwritten formula sheet for use during the exam. Each one will be checked by faculty in the lecture hall before/during the exam. For each midterm exam it must be no bigger than a 3" x 5" index card; for the final exam it must be no bigger than an 8.5" x 11" sheet of paper. Both sides may be used in each case. All exams will emphasize testing your ability to think ``physically" and to do reasonable calculations. We do not expect you to memorize formulas, but we do expect you to know what all their symbols mean and how to use them.

Warnings about final grades

If your academic program requires that you pass PHY 132 with a "C or better", you should not expect that a D+ final grade will be "rounded up" to a C grade. By extension, this policy will apply at other grade boundaries, too. It's up to you to monitor your progress during the semester and, with the best work of which you are capable, to raise your own grade as high as you can. If, for whatever reason, you end up below some final grade boundary, do not ask if there is "extra work" you could do at the end of the course to "raise your grade". Such a question will not be answered because you know now, at the beginning of the course, the answer is "no".

Review before exam(s)

Some brief review will be done during each recitation section meeting, especially in the one preceding each course-

wide exam. For each exam additional ``not-for-credit practice problems" covering material in chapters being examined will be made available via MasteringPhysics several days before the exam. These practice problems will be similar to the for-credit problems previously assigned via MasteringPhysics. All these problems, especially chalkboard problems in recitation taken from lectures, and ``worked-example" textbook problems, which are especially good in this regard, provide useful, reasonable indicators for the kinds of problems that will be on the exams. Exam problems will cover a range from "easy" to "difficult".

Religious Observances

The link
https://www.stonybrook.edu/commcms/provost/faculty/handbook/employment/list_of_religious_and_university_holidays.php
has the University's holiday list for the Fall 2018 semester. Students will be expected to notify Prof. Koch and/or the applicable recitation instructor(s) by email, in advance, definitely before the "Late Registration Ends" deadline of 4:00 pm on 10 September 2018, of their intention to be out for any religious observance during the semester. They must discuss with their instructor(s) before that deadline how they will be able to do all assignments by their deadlines.

Americans with Disabilities Act

If you have a physical, psychiatric/emotional, medical or learning disability that may impact on your ability to carry out assigned course work, you should contact the staff in the Disability Support Services office [DSS], ECC (Educational Communications Center) Building, Room 128, (631)632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the website http://studentaffairs.stonybrook.edu/dss/ .

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.

Schedule Calendar

The PHY 132 Fall 2018 Schedule calendar is posted in the Documents folder of our PHY 132.01 (R01-R04) Blackboard site. It has been/will be updated from time to time, so make sure you don't ignore it even before classes start on 8/27/18. You are responsible for being aware of updates and corrections, which are/will be shown in green text.

(Fall 2018 PHY 132 Calendar updated on 8/31/2018: corrections/additions will be in green and underlined)

Aug 2018	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
No Recitations 27-31 Aug.	**Aug 27** classes begin **PHY 132 Lec 1:** Some course admin; then begin Ch. 21 : Electric Charge & Electric Field.	28	29 **PHY 132 Lec 2:** Ch. 21 : Electric Charge & Electric Field.	30	31 **PHY 132 Lec 3:** Ch. 21: Electric Charge & Electric Field. **MasteringPhysics "Intro" assignment (up to 22 extra points) deadline: 10:00 pm. It went "live" at 6:30 pm on 8/11/18.**	**Sep 1** MasteringPhysics homework deadline for **Chap. 21 10:00 pm**	2
Sep 2018 All recitations meet at their scheduled times	3 Labor Day Holiday No classes today	4	5 **PHY 132 Lec 4:** finish Ch. 21; then begin Ch. 22: Gauss's Law	6	7 **PHY 132 Lec 5:** finish Ch. 22: Gauss's Law	8 MasteringPhysics homework deadline for **Chap. 22 10:00 pm**	9
	10 **PHY 132 Lec 6:** begin Chap. 23; Electric Potential	11	12 **PHY 132 Lec 7:** Chap. 23; Electric Potential	13	14 **PHY 132 Lec 8:** finish Chap. 23; Electric Potential	15 MasteringPhysics homework deadline for **Chap. 23 10:00 pm**	16
	17 **PHY 132 Lec 9:** begin Ch. 24: Capacitance, Dilectrics, Elec. Energy Storage	18	19 **PHY 132 Lec 10:** Ch. 24: Capacitance, Dilectrics, Elec. Energy Storage	20	21 **PHY 132 Lec 11:** finish Ch. 24: Capacitance, Dilectrics, Elec. Energy Storage	22 MasteringPhysics homework deadline for **Chap. 24 10:00 pm**	23
	24 **PHY 132 Lec 12** begin Ch. 25: Elec. Current & Resistance	25	26 **PHY 132 Lec 13** Ch. 25: Elec. Current & Resistance	27	28 **PHY 132 Lec 14** finish Ch. 25: Elec. Current & Resistance	29 MasteringPhysics homework deadline for **Chap. 25 10:00 pm**	30
Oct 2018 All recitations meet at their scheduled times	1 **PHY 132 Lec 15** begin Ch. 26: DC Circuits	2	3 **PHY 132 Lec 16** Ch. 26: DC Circuits	4 **Midterm Exam 1**: 8:45 pm to 10:15 pm; room to be announced	5 **PHY 132 Lec 17:** finish Ch. 26; then tben begin Ch. 27: Magnetism	6 MasteringPhysics homework deadline for **Chap. 26 10:00 pm**	7
	8 Fall Break No classes	9 Fall Break No classes	10 **PHY 132 Lec 18:** Ch. 27: Magnetism	11	12 **PHY 132 Lec 19:** finish Ch. 27: Magnetism	13 MasteringPhysics homework deadline for **Chap. 27 10:00 pm**	14
	15 **PHY 132 Lec 20** begin Ch. 28: Sources of Magnetic Field	16	17 **PHY 132 Lec 21** Ch. 28: Sources of Magnetic Field	18	19 **PHY 132 Lec 22** finish Ch. 28: Sources of Magnetic Field	20 MasteringPhysics homework deadline for **Chap. 28 10:00 pm**	21
	22 **PHY 132 Lec 23** begin Ch. 29: Electromagnetic Induction and Faraday's Law	23	24 **PHY 132 Lec 24** Ch. 29: Electromagnetic Induction and Faraday's Law	25	26 **PHY 132 Lec 25** finish Ch. 29: Electromagnetic Induction and Faraday's Law	27 MasteringPhysics homework deadline for **Chap. 29 10:00 pm**	28
	29 **PHY 132 Lec 26** begin Ch. 30: Inductance, Electromagnetic Oscillations, and AC Circuits	30	31 **PHY 132 Lec 27** Ch. 30: Inductance, Electromagnetic Oscillations, and AC Circuits	**Nov 1**	2 **PHY 132 Lec 28** finish Ch. 30: Inductance, Electromagnetic Oscillations, and AC Circuits	3 MasteringPhysics homework deadline for **Chap. 30 10:00 pm**	4
Nov 2018 All recitations meet at their scheduled times	5 **PHY 132 Lec 29** begin Ch. 31: Maxwell's Equations and Electromagnetic Waves	6	7 **PHY 132 Lec 30** finish Ch. 31: Maxwell's Equations and Electromagnetic Waves	8 **Midterm Exam 2**: 8:45 pm to 10:15 pm; room to be announced	9 **PHY 132 Lec 31** begin Ch. 32: Light Reflection and Refraction	10 MasteringPhysics homework deadline for **Chap. 31 10:00 pm**	11
	12 **PHY 132 Lec 32** Ch. 32: Light Reflection and Refraction	13	14 **PHY 132 Lec 33:** finish Ch. 32; then begin Ch. 33: Lenses and Optical Instruments	15	16 **PHY 132 Lec 34:** Ch. 33: Lenses and Optical Instruments	17 MasteringPhysics homework deadline for **Chap. 32 10:00 pm**	18
	19 **PHY 132 Lec 35:** finish Ch. 33: Lenses and Optical Instruments	20	21 **No classes**	22 Thanksgiving Day **No classes**	23 **No classes**	24 MasteringPhysics homework deadline for **Chap. 33 10:00 pm**	25
	26 **PHY 132 Lec 36** begin Ch. 34: The Wave Nature of Light; Interference	27	28 **PHY 132 Lec 37** Ch. 34: The Wave Nature of Light; Interference	29	30 **PHY 132 Lec 38** finish Ch. 34: The Wave Nature of Light; Interference	**Dec 1** MasteringPhysics homework deadline for **Chap. 34 10:00 pm**	2
Dec 2018	3 **PHY 132 Lec 39** begin Ch. 35: Diffraction and Polarization	4	5 **PHY 132 Lec 40** Ch. 35: Diffraction and Polarization	6	7 **PHY 132 Lec 41** Ch. 35: Diffraction and Polarization	8 MasteringPhysics homework deadline for **Chap. 35 10:00 pm**	9
	10 **(Last day of classes)** Prof. Koch will discuss some of his physics research	11	12	13 **Final Exam:** 11:15 -1:45 pm room to be annnounced	14	15	16