

Syllabus for Physics 132: Classical Physics II (Fall 2017) at Stony Brook University

(as of 8/24/17; expect additional updates to this Syllabus; the last previous update was 8/19/17)

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.

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 **SBC:** SNW 3 credits

Learning Outcome

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

Instructors

Lecture

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 has no voice mail.

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

R02 (Mon, 4:00-4:53 pm, P112 Physics Bldg); Instructor Peter.Koch@stonybrook.edu (D-114, Physics Bldg)

R04 (Tue, 3:00-3:53 pm, P112 Physics); Instructor: Kenneth.Lanzetta@stonybrook.edu (456 Earth Space Science Bldg)

R05 (Fri, 12:00-12:53 pm, P112 Physics); Instructor: Kenneth.Lanzetta@stonybrook.edu (456 Earth Space Science Bldg)

(Because of enrollments so far, R01 and R03 were cancelled a month or more before classes start on 8/28/17.)

Course Organization (in 4 parts)

Preparation by you is crucial for success!

The Google Calendar for PHY 132 Fall 2017 is at this link

https://calendar.google.com/calendar/embed?src=m8is3oditkqkvr4baqq3ncjhg%40group.calendar.google.com&ctz=America/New_York

in the upper-left “gray” area of the Blackboard PHY 132.01 home page. In 15 weeks the course will cover (most of) the material in 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 fifteen homework problems from each chapter – some relatively short and at least a few significantly longer -- are assigned each week via Mastering Physics 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 the online homework assignments. “But I didn’t have enough time to do them!” 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.

Lecture

Lectures are in Harriman Hall room P-137. Since lectures will start and end promptly, make sure you arrive a few minutes before 11:00 AM and do not leave before 11:53 AM. Lectures will be a mixture of projected slides, short videos and/or live demonstrations, and some step-by-step presentations of certain important concepts and exemplary problems by Prof. Koch, either on the chalkboard or via an iPad “whiteboard” being projected on the screen. Each lecture will be recorded using the *Echo360* system that captures two video streams and presents them via Blackboard within an hour or two after that particular lecture ends. Each student will be able to access each two-stream, video recording as many times as desired. One stream records what is projected on the screen in the room. A second stream projects the whole front wall of the room, which includes the chalkboards, projector screen, and table in the front of the screen.

An important plea: Since the use of Professor Koch’s iPad and laptop computer paired together requires a wi-fi link between them, all students in the lecture must – **before** the lecture starts -- **turn off (“power down”) their smartphones and other electronic devices that can “rob” bandwidth during the lecture.** Though what is written on the chalkboard (or the iPad whiteboard) will be recorded by *Echo360*, each student should make written notes for those parts of each lecture. This should motivate each student to attend all lectures.

All slides projected in each lecture will be posted as a pdf file in Blackboard within an hour after that lecture.

In previous semesters of PHY 131 and PHY 132, Prof. Koch required students to have and use their own “clickers” (electronic response devices) in all lectures. Though clickers are useful for some tasks, he has decided that the time required for using them could be better spent in chalkboard or whiteboard work (see above) during the lectures.

Recitation sections (R01, R04, R05)

Since $\sim 10^2$ enrolled students cannot receive significant individual attention during lectures in Harriman 137, the course includes three recitation sections. Each is taught by faculty and is typically focused on helping students to understand and complete homework assignments. It is likely that a quiz prepared and graded by the recitation instructor, or some other instrument, will be used to determine the student's recitation grade. Recitation sections will give time for going over certain administrative details for the course and for refreshing certain mathematical skills such as the use and manipulation of vectors and the use of elementary differential calculus and some integral calculus. These will be crucial for PHY 132. **Recitations will not meet during the first week of classes, and, because of the Labor Day holiday break, only R02 will meet in the second week.**

Help Room (A-129 physics building)

Course instructors (including recitation instructors) and graduate-student TA’s 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, PHY 132, PHY 133, and PHY 134. (The other Help Room, A-131, serves students in PHY 121 + 123 and 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 Blackboard area and physically on the A-129 door some time during the first 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, considering hiring a tutor.

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.

Required Material and Procedures

1. All Course Information distributed via Blackboard (such as this syllabus). Check Blackboard daily! PHY 132-related information posted on Blackboard as “Announcements” will also be sent verbatim to all enrolled

students via email from within the course-wide Blackboard site [PHY 132.01 \(R01-R05\) Classical Physics II - Fall 2017](#) . Since 14 August 2013 it has been 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 your (lecture and/or recitation) instructor, you must use your University email address not some other “personal” email address. “Personal” email sent to a faculty member will be ignored and deleted.

2. The Blackboard site in item 1, above, is the only one that all PHY 132 students 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.R02, PHY 132.R04, or PHY 132.R05. 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-R05) 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 2017 classes into the respective recitation-section Blackboard gradebooks.
3. A “bundle” (via an “access code”) consisting of “Modified MasteringPhysics New Design with Pearson eText for *Physics for Scientists and Engineers*, 4th edition (with Modern Physics)”, by D. Giancoli: ISBN 9781323472392.
4. Go to the following link https://blackboard.stonybrook.edu/bbcswebdav/pid-4163408-dt-content-rid-27887331_1/xid-27887331_1 to get detailed instructions for how to (i) purchase the access code for the bundle of the eText and the MasteringPhysics weekly online homework assignments.

If you need to enter the “Course ID” to link Blackboard to the correct ModifiedMasteringPhysics course, the correct course ID for PHY 132 Fall 2017 is **koch45657** . After all the above, do the following test to see if your Blackboard account and Pearson account are properly linked. On the “Pearson’s MyLab & Mastering” page on Blackboard, click on the “Pearson eText” icon. If that takes you to the Giancoli, 4th edition textbook, it’s working. You can also test 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 most of you probably worked through at the beginning of PHY 131. (If you need a refresher, do that “Introduction” assignment now.)

5. **A calculator that should not be used to store formulas.** The idea is that you use your calculator to calculate, not to act as a formula sheet during exams. Your calculator should have: addition, subtraction, multiplication, division, exponentiation, trig functions, log functions, square root, etc. Use the same calculator for homework assignments, recitation quizzes, and lecture-hall exams. **Using a smart phone as a calculator is not allowed during any exam or any recitation-section quiz.**

Grades

Final grades will be calculated based upon contributions (MT = midterm exam; FE = final exam; Rec = recitation section; HW = homework) weighted by the following percentages: **(This table was updated on 8/19/17)**

	MT 1	MT 2	FE	Rec	HW
Percentage	17	17	34	16	16

Your final score based upon the weightings listed above will be compared to the following scale to determine 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. Monitor your progress on Blackboard.

	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

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 three 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

You **must** have your University ID card, face-up on the desktop, at all three course-wide exams: two midterm exams plus the final exam; see the “Google 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 as students enter the lecture hall before the exam. For the midterm exams 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. 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.

You are responsible for ensuring that you can attend the exams at the 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 Google Calendar for PHY 132. Check with Professor Koch if you have any questions about this policy.

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”.

Getting Help

PHY 131 and PHY 132 are indeed fast-paced and difficult courses, and most students require help from time to time. Don’t fall behind; you can and should get the help you need to stay with the course.

Help Room

See the previous section “Help Room (A-129 physics building)” in this document.

Review before exam(s)

Some brief review will be done during each recitation section meeting, especially in the one preceding each course-wide exam. As shown in the Google Calendar, there are two midterms that will be given in the lecture hall at the regular lecture time, 11:00-11:53 am: Midterm 1 (it covers Chapters 21-25) on Monday, 2 October, and Midterm 2 (it covers Chapters 26-30) on Monday, 2 November. The Final Exam (it covers all chapters, 21-35) is 11:15 am -1:45 pm, Thursday, 14 December 2017. For each exam additional “not-for-credit practice problems” that cover the chapter material being examined will be made available via MasteringPhysics at least several days before the exam. These practice problems will be similar to the for-credit problems previously assigned via MasteringPhysics. All these problems, “chalkboard” or “whiteboard” problems from the lectures, and “worked-example” textbook problems, which are especially good in this regard, will 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

This link <http://www.stonybrook.edu/commcms/provost/resources/rel.html> has the University's "Holiday or Observance" list for the Fall 2017 semester. Students will be expected to notify Prof. Koch and/or the applicable recitation instructor(s) by email, in advance, definitely before the "drop/withdraw" deadline of 4:00 pm on 12 September 2017, of their intention to be out for any religious observance during the semester. They must discuss with their instructor(s) by that time how they will be able to secure the work covered.

Academic Integrity

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. You may discuss with your colleagues (other students or Help Room personnel) the "physics" of assigned homework problems, but you should not ask to be given nor give to others actual solutions to those problems. The reason for this is obvious. You only hurt yourself if you submit answers that you get from somebody else and don't understand. In an exam in the 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 the Academic Judiciary with a recommendation that the penalty be a final grade of **F** in PHY 132.

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.

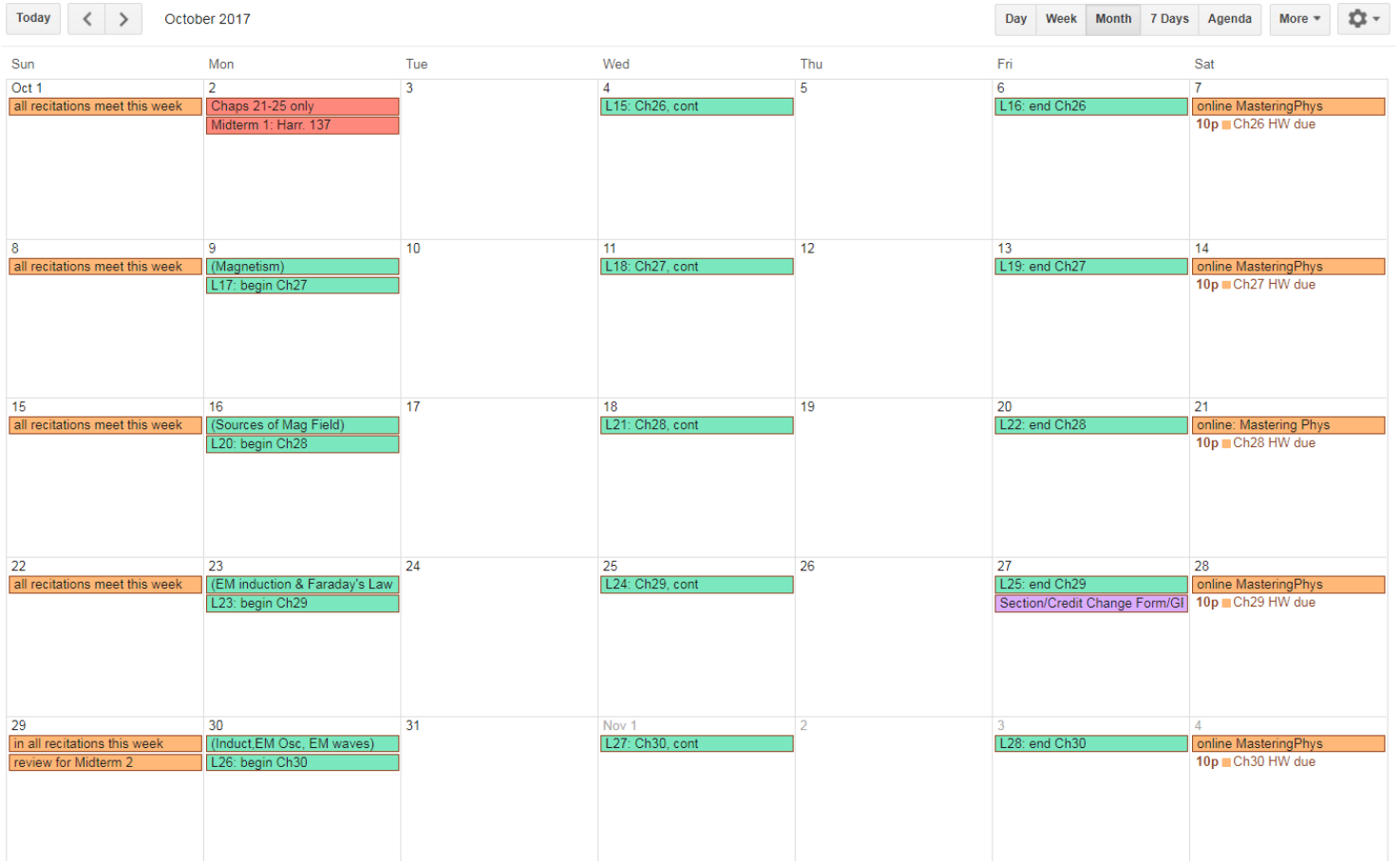
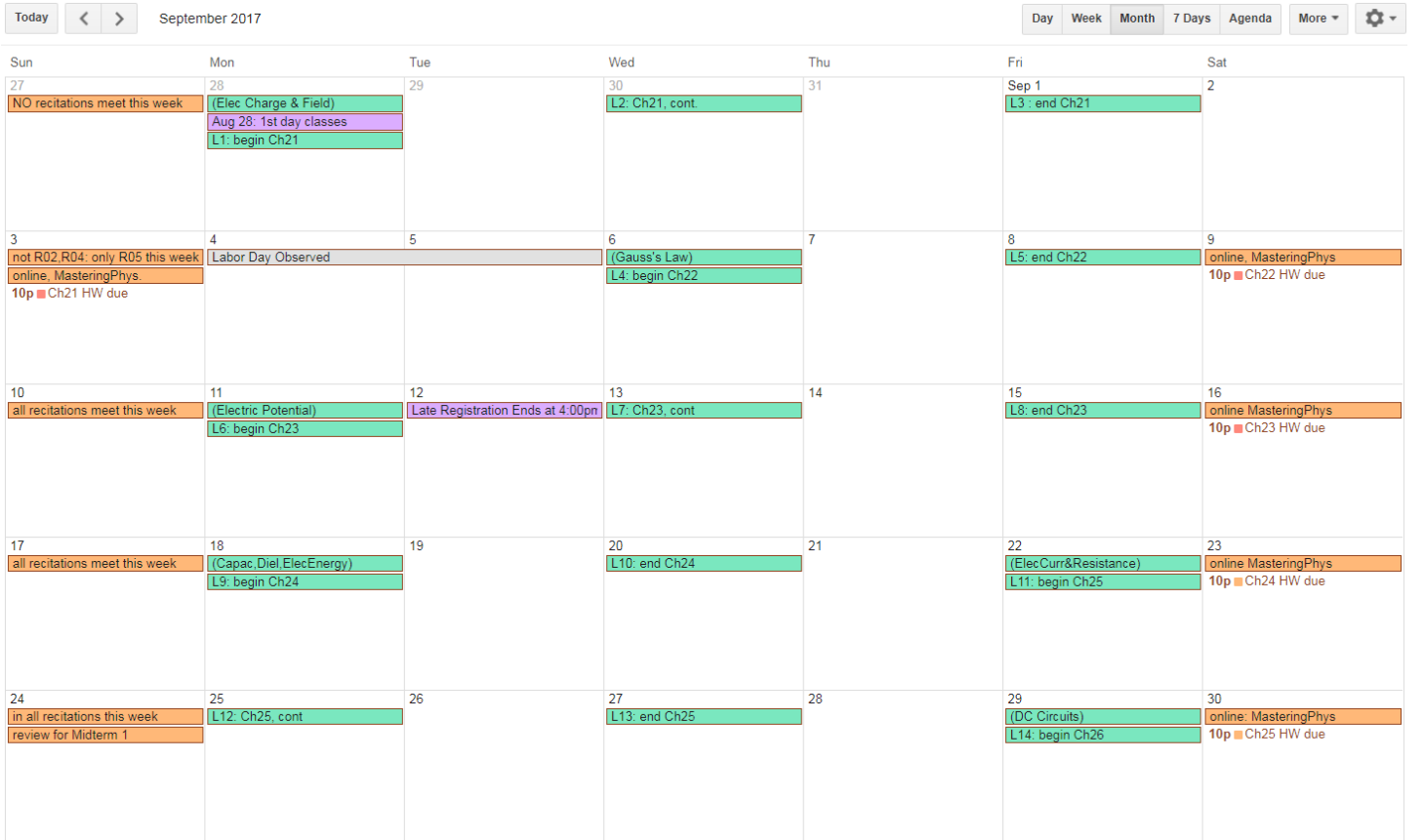
Google Calendar

Here is the link to the PHY 132 Fall 2017 Google calendar; it is also posted on Blackboard.

https://calendar.google.com/calendar/embed?src=m8is3oditkqkvr4bagq3ncjhg%40group.calendar.google.com&ctz=America/New_York.

Since the "linked" Google Calendar is (monotonous) monochrome, screenshots below show a colorful page for each of the months September-December 2017. They will be updated from time to time as needed.

Google Calendar (colorful) screenshots as of 8/23/17:



Sun	Mon	Tue	Wed	Thu	Fri	Sat
29 in all recitations this week review for Midterm 2	30 (Induct EM Osc, EM waves) L26: begin Ch30	31	Nov 1 L27: Ch30, cont	2	3 L28: end Ch30	4 online MasteringPhys 10p ■ Ch30 HW due
5 all recitations meet this week	6 Chaps 26-30 only Midterm 2: Harr. 137	7	8 (MaxwEqs & EM waves) L29: begin Ch31	9	10 L30: end Ch31	11 online MasteringPhys 10p ■ Ch31 HW due
12 all recitations meet this week	13 (Light, Reflec & Refraction) L31: begin Ch32	14	15 L32: end Ch32	16	17 (Lenses & Opt Instrum) L33: begin Ch33	18 online MasteringPhys 10p ■ Ch32 HW due
19 Mon, Tue recitations meet this w	20 L34: Ch33, cont	21	22 Thanksgiving Break	23	24	25
26 Thanksgiving Break all recitations meet this week	27 L35: end Ch33	28	29 (Wave nature of light, Interferen) L36: begin Ch34	30	Dec 1 L37: end Ch34	2

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26 Thanksgiving Break all recitations meet this week	27 L35: end Ch33	28	29 (Wave nature of light, Interferen) L36: begin Ch34	30	Dec 1 L37: end Ch34	2
3 in recitations this week review for Final Exam	4 (Diffraction & Polarization) L38: begin Ch35	5	6 L39: Ch35, cont	7	8 L40: end Ch35	9 Classes End
10	11 Reading Day(s)	12 Finals	13	14 Harriman Hall room 137 PHY 132 Final Exam 11:15 ■ am to 1:45 pm	15	16
17 Finals	18	19	20 Semester End	21	22	23