Course Web Home Page: We will be using Canvas for online announcements, resources, workshop quizzes and surveys, and practice exams, please check our Canvas site several times a week to stay up-to-date with course announcements.

Instructor: Dr. Geraldine L. Cochran  
Tel. 848 445 8757  
Email: Geraldine.cochran@physics.rutgers.edu

Lecture: Physics Lecture Hall, Mondays and Thursdays, 12:15 – 1:10pm

Exams Periods: Physics Lecture Hall, Mondays and Thursdays, 12:00 – 1:20pm

Required Materials:

- Online Homework system: Available online at Mastering Physics. The course key which will be posted on Canvas is: MPCOCHRAN61989

- iClicker Cloud (formerly called iClicker Reef) subscription, available online at: https://www.iclicker.com/pricing A 6-month subscription is $14.99. Note: you do not need to purchase an iClicker transmitter, just the iClicker Cloud subscription since iClicker Cloud allows students to use smartphones, laptops, and tablets to interact with lecture polls, quizzes, and questions. If you already purchased an iClicker transmitter you will still need to purchase an iClicker Cloud subscription to participate in lecture activities.

- SCIENTIFIC calculator (not graphing, not programmable; available at Target, Walmart, Rutgers bookstore, etc., for ~$10). This is the only calculator you need as a practicing engineer. Buy solar, it will last for a very long time. Required, or else you will do all calculations on exams by hand.

Recommended Materials:

- College Physics: Explore and Apply, 2e by Etkina, Planinsic, and Van Heuvelen. You do not need to buy the entire textbook. You can purchase the e-text combined with Mastering Physics access (ISBN 1323910581) for $75 from Pearson and for $100 at the bookstore.

- College Physics by OpenStax, available for free online at: https://openstax.org/details/college-physics. This is a standard textbook and it is free.

- Three-ring binder, at least 1½”, to keep your course handouts and activities in the binder (there will be a lot).
Pretesting and Post-testing
All of the engineering students are being tested in their core courses this fall at the beginning of the semester and again at the end of the semester. These data will be used to improve your learning experiences in these courses and in your future courses.

There is one in-class paper test and one online survey that you must take during the first week of classes as pretests, and again at the end of the semester as posttests. So, you will need to complete four tests in all – two at the beginning (one in class, one online) and two at the end of the semester (one in class, one online) in order to receive credit for having taken the tests.

The online survey takes about 20 mins, must be completed by 9/15/2018 11:59 pm. Information on how to access will be available on Canvas.

If you miss the in-class test, you will find make up times posted to Canvas. If you don’t take the tests it will count against you in your course grade, and if you do take the tests it will help your course grade – regardless of how well you do on the tests. If you don’t want your data to be included, please see the informed consent available on the online survey and on Canvas regarding your rights to not have your data included in this study or any other studies.

Structure of the Course:
This course follows a weekly cycle that starts on Mondays.
- Each activity feeds into the next.
- You’ll work on the Mastering Physics Homework and submit it by 12:15pm on Mondays and again by 11:59pm on Fridays. The Friday homework will be much shorter than the Monday homework.
- Office hours are available outside of class, in addition to RLC tutoring, to help you with the Mastering Physics activities.

Lecture
Coming prepared to lecture is required for this course. You are required to purchase an iClicker Cloud subscription in order to participate in lecture (for more information, see “Required Materials” above). Note: iClicker Cloud allows you to participate with smartphones, laptops, and tablets, and iClicker Cloud was previously called “iClicker Reef”, however it refers to the same subscription. The link to purchase an iClicker Cloud subscription is found here: https://www.iclicker.com/pricing

Workshop and Summary Problem Session Meeting Times: (NPL 213)

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<thead>
<tr>
<th>Section</th>
<th>Section Meeting times</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>R1</td>
<td>T F 10:20-11:40 AM</td>
<td>Catie Raney</td>
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<tr>
<td>R2</td>
<td>T F 12:00-1:20 PM</td>
<td>Charlotte Olsen</td>
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<tr>
<td>R3</td>
<td>W F 8:40-10:00 AM</td>
<td>Catie Raney</td>
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<td>R4</td>
<td>F W 3:20-4:40 PM</td>
<td>Sabrina Appel</td>
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<tr>
<td>R5</td>
<td>W F 5:00-6:20 PM</td>
<td>Sabrina Appel</td>
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<tr>
<td>R6</td>
<td>T R 6:40-8:00 PM</td>
<td>Atithi Acharya</td>
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<td>R7</td>
<td>F T 1:40-3:00 PM</td>
<td>Charlotte Olsen</td>
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<td>R8</td>
<td>R T 5:00-6:20 PM</td>
<td>Marianne Vanier</td>
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<tr>
<td>R9</td>
<td>R T 3:20-4:40 PM</td>
<td>Atithi Acharya</td>
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**Workshop:**
The Workshop Activity takes place during one of the recitations that is listed in your course schedule. There you will work collaboratively and will take a quiz at the end of the recitation meeting. In the case of emergency, you can make up a missed Workshop the same week during a different recitation, but you must get permission from Dr. Cochran BEFORE you can attend a different recitation time. A Workshop cannot be made up after the Wednesday section that starts at 5:00 pm (R5), but the lowest score will be dropped when calculating your final grade. In general, at least 30% of the exam questions are based on the Workshop activities.

**Summary Problem Session:**
The Summary Problem Session takes place during the second recitation of the cycle. In this session you will be working on problems that summarize the previous week’s work. You can make up missed Summary Problems during any other regularly scheduled summary session, but you must get permission from Dr. Cochran BEFORE you can attend a different session time. This is to ensure there is enough space as some sessions are currently at a maximum. These problems cannot be made up after the last summary session on Friday (5:00 pm start R5), but the lowest score will be dropped when calculating your final grade. In general, at least 30% of the exam questions are based on the summary problem activities.

**Homework and Office Hours**
*Physics is a problem-based discipline, you must do the homework in order to learn the material.*
The online homework assignments should be started during the week in which the material is discussed in lecture, though, you can always complete homework ahead of time. This homework will be submitted online at Mastering Physics. The course code is:

**MPCOCHRAN61989**

The course staff will hold office hours during the week in NPL 213. Please come and get any questions you have answered; this time is your time. Instructor office hours and location will be posted on Canvas. Recitation time will not be used to go over homework, it is your responsibility to seek help on the homework during office hours or campus tutoring. You are welcome to attend the office hours of ANY instructor to get help. The homework is due electronically; the deadlines are Monday by 12:15 pm or Friday by 11:59 pm (but can be submitted any time before then). NO HOMEWORK WILL BE ACCEPTED LATE.

**Study Groups:** Study groups may be available this semester. Look out for an announcement on Canvas, in your email, and in lecture about this.

**The Math and Science Learning Center Tutoring:**
The MSLC is an innovative facility to assist students studying physics and related subjects. There you can find RLC tutoring for a variety of math and science courses, including this one. You can come find your colleagues and get answered any questions you may have. Please visit: [http://mslc.rutgers.edu/mslc](http://mslc.rutgers.edu/mslc)
**Rutgers Learning Centers:**
The Rutgers Learning Centers (RLC) can provide you with assistance with academic coaching, test anxiety, test-taking strategies, or one-on-one tutoring in many subjects. [http://rlc.rutgers.edu](http://rlc.rutgers.edu)

**Students with Disabilities:**
If you have a disability, you are urged to speak to the course supervisor early in the semester to make the necessary arrangements to support a successful learning experience. Also, you must arrange for the course supervisor to receive a letter from your College's Disabilities Concerns Coordinator verifying that you have a disability. A list of the College Coordinators can be found at: [http://www.physics.rutgers.edu/ugrad/disabilities.html](http://www.physics.rutgers.edu/ugrad/disabilities.html)

**Policy on Cheating:** You are encouraged to work with others in this course but the work you turn in must be YOUR work in YOUR words. If the work on your paper is the same as that of anyone else in the class, your College Dean will be notified and you will receive a “0” for the assignment. This means that if someone copies your work or you copy someone’s work, both papers will receive zeros. A zero on an exam will result in you failing this course, and possible expulsion from the University.

Your course grades are determined by the following:

**Hourly Exams (2) – 11.5% each:** There will be two common hourly exams that will be held in class from 12:00 – 1:20 PM. Each exam counts as 11.5% of the total course grade.

*EXAM POLICY:* Bring a pencil and a scientific calculator. You will not be permitted to bring anything else to the exams. The exam formula sheet will be available on Canvas and will be provided to you at the exam. **You will have the entire period 12:00 – 1:20 pm to take hourly exams.**

**Design Practicals (3) – 11.5%:** There are three experimental design practicals during the semester that your group will prepare together in class. The design practicals and presentation combined count as 11.5% of total grade.

**Final Exam (1) – 23%:** The cumulative final exam is worth 23% of the total course grade, double that of a single hourly exam. The exam policy stated above is also followed for the final exam.

**Recitation Grade (Workshop – 11.5%, Summary Session – 11.5%):** Your recitation grade is determined by two activities, a quiz at the end of Workshops, and work handed in at the end of Summary Problem Sessions. Workshop quiz grades are worth 11.5% of your total course grade, and Summary Problem Sessions are worth 11.5% of your total course grade.

**Online Homework – 11.5%:** Online homework is due Mondays by 12:15 pm and Fridays by 11:59pm through Mastering Physics is worth 11.5% of your total course grade.

**Lecture Participation – 5%:** Participation in lecture as evidenced by responses to clicker questions and submission of lecture responses via index cards or on Canvas.
Pre and posttests – 3%: There is one in-class paper test and one online survey that you must take during the first week of classes as pretests, and again at the end of the semester as posttests. So you will need to complete four tests in all – two at the beginning (one in class, one online) and two at the end of the semester (one in class, one online) in order to receive credit for having taken the tests. Completing all four tests is worth 3% of the total course grade.

Course Grade:

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<tr>
<td>100-85%</td>
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<td>84-80</td>
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