Welcome to Descriptive Physics! This one semester course has been designed to provide students from a number of different majors (e.g. wildlife biology, architecture, secondary education, and sociology) with an overview of physics (with lab) in only one semester. All students should understand that this (5 credit-hour course) will be a demanding undertaking: we will be covering mechanics, heat, sound, electricity, and optics in a single semester. Therefore, proper effort and concentration are the keys to success in this course. So, seize on the hard work as a chance to learn about the physical world. There is a strong correlation between success in this course and success in subsequent technical courses in your undergraduate program (e.g. the structures-courses of the architecture curriculum).

Goals
I. To learn ~20 simple models (and equations) of physical processes. These models will serve as a basis for breaking down and synthesizing an accurate understanding of the complex natural processes that you encounter every day.

II. To observe that these models accurately predict what will happen in a range of situations.

III. To develop a systematic approach to solving physics problems in a manner that is logical, legible, and sensible to another person. This amounts to making accurate, quantitative predictions of outcomes of various physical situations.

Course Components: This course consists of 3 sections: lecture, studio, and Tuesday exams. Make sure you are enrolled in these three sections. Your grade will be based on twice-weekly online homework assignments (15 %), written homework (5 %), studio labs (15%), and studio quizzes (5 %), midterm exams (39 %: best three), a final exam (18%), and class participation (3 %). Make-up exams will not generally be allowed.

Lectures: The purpose of the lectures is to introduce and demonstrate physics concepts and problem solving techniques. They will help you develop the aerial view that enables you to understand what the homework problems are asking. However, two, 50 minute lectures per week will not be sufficient to train you in problem solving techniques or to teach you physics in any useful way. That requires practice (by you) and assistance on a student-to-student or instructor-to-student level, which is what the studios and office hours are for. It is important
to understand this difference between a University-level course and a traditional high school course. I will ask you Concept Questions during the lectures, to which you will respond by i-clicker (available at the Union bookstore). Bring your i-clicker to every class. This mechanism lets me get on-the-spot feedback on your thinking. I won’t grade your i-clicker questions but will keep track to see that you are responding (class participation). Many Concept Questions will show up on the exams.

**Online Homework:** You will be assigned two online problem sets per week (one per lecture). The weekly due dates are WF at 10:00 PM (unless otherwise noted). These times follow the studio meeting times, so you can get help on the homework in studio. You need to download the homework assignments from WebAssign, for which you need to buy an access card at the bookstore or online. Once you login, you will see the homework assignments and the corresponding due dates. Submit your answers in WebAssign by the due date for the assignment. You will have three chances to input a correct answer, so you need to work out the problems fully on paper before entering your answers in WebAssign. WebAssign customizes each problem, so you can’t simply copy somebody else’s solution. **Success in this class correlates very closely with ability to independently work the homework problems by the time the exams are given.** Begin every problem with a clearly labeled diagram. Work out the solution algebraically, showing all steps. Don’t substitute quantities for symbols until the last step. Check the units of the answer, and consider its reasonableness (right power of ten?). When doing your homework, you may find it helpful to discuss the problems with fellow students. This is acceptable. Just remember that success on the exams is dependent on your ability to work physics problems by yourself (*i.e.* without the assistance of your text book or study companions). There are no make-ups on homework, but your lowest 3 homework scores will be dropped. Solutions will be posted on the bulletin board at the end of the second floor hallway of Cardwell. Your three lowest online homework scores will be dropped.

**Written Homework:** For every online problem set that is assigned on Monday (and is due Wednesday evening), you are required to turn in your written solutions. They will need to be turned by 10:00 AM on Thursdays into the appropriate box at the west end of the second floor hallway in Cardwell Hall. This is the morning after the online be due at the same on Thursday Morning at 10:00 AM. Your solutions will be checked for problem solving technique, which means that your work must be clear to the TA that grades the work. Your three lowest written homework scores will be dropped.

**Studio:** You will learn a lot about the lecture-material in the corresponding studio (there is one 110 minute studio session for each 50 minute lecture). There you will take a short quiz each meeting on how a key idea from lecture should be tested experimentally in order to see if it accurately predicts what really happens. You will also break out into groups of four to do active, hands-on demonstrations (experiments), in addition to getting homework help. The studio manual is posted on KSO. **You must bring a 5 x 5 quad ruled notebook to the first studio (available at the KSU bookstores). Don’t bring a spiral bound notebook.** The studio sessions will have the following components: a pre-studio exercise/quiz (Thursdays only); a laboratory activity (for which you will write a lab report); and homework help.
**Lab Reports and Quizes:** You will write out the lab reports in your lab books in each studio session. They will be graded by “semi-group” with two lab report per group selected randomly at the end of each studio session. Write your partner’s name in your book! The write-up will be graded, and you and your partner will be assigned that score. Each lab will be graded on a 10 point scale. The quizzes will be graded individually. Each quiz will be scored on a 3 point scale. We have 28 studios sessions (tentatively) scheduled for the semester. You may miss three without penalty. There are no make-up studios.

**Exams:** There will be four 75-minute exams each worth 130 points, the lowest of which will be dropped. These exams will be held from 5:30-6:45 PM on selected Tuesdays in CW 101 and 103. The final exam is comprehensive and worth 180 points. It cannot be dropped or substituted. All exams will be composed of multiple choice questions, word problems, and short answers. The multiple choice questions will resemble the concept questions that we go over in the lectures. The calculations will resemble the homework problems and quiz questions. An equation sheet will be supplied with each exam, but no other material (such as text books, lecture notes, or crib sheets) may be used. The lowest of your five exam scores will be dropped. A missed exam generally cannot be made up, and you must take the final exam to pass the class. The dates for the Tuesday exams will be February 9, March 1, March 22, and April 19. The final exam will be held on Thursday May 12 from 6:20-8:10 PM.

**Make-up policy:** Missed studio assignments and online homework assignments cannot be made up. The online homework assignments are accessible anywhere in the world with internet connectivity, while the studios require too much setup (space, equipment, time, and staff) to be made up. You are, however, allowed to drop preset numbers of your lowest studio and homework scores. Make-ups for the Tuesday exams will generally only be given if you have a bona fide personal emergency (funeral or significant illness) or you are called for jury duty. If KSU sponsored off-campus travel prevents you from taking a Tuesday or Final exam at the normal time and place, then you must contact your academic advisor to arrange for a proctored exam to be given to you on your trip. Give me at least two weeks advanced notice of such events.

**Grades:** Possible Points:

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<thead>
<tr>
<th>Distribution of Maximum Possible Points</th>
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<tbody>
<tr>
<td>Online Homework</td>
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<tr>
<td>Written Homework</td>
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<tr>
<td>Studio Lab Reports (best 25)</td>
</tr>
<tr>
<td>Studio Quizzes (best 25)</td>
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<tr>
<td>Tests (best 3)</td>
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<tr>
<td>Final Exam</td>
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<tr>
<td>Class Participation</td>
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<td>Total</td>
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**Letter Grades:** The grade boundaries will not be higher than the scale given below.

A ≥ 900        B ≥ 800        C ≥ 700        D ≥ 600        F < 600
Help: Any student who would like individual help is encouraged to see me or a studio instructor during office hours or at other times by appointment. Help is also available from the Physics Help Room. Most good options for getting help are free, so hold on to your money and refrain from hiring a tutor without seeing me first. If you feel like you are in trouble, see me ASAP. I want each of you to attain the class goals. It is not my job to flunk you out of your college or scuttle your graduation plans.

Academic Honesty: Kansas State University has an Honor 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 System. The policies and procedures of the Honor 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 system website can be reached via the following URL: www.k-state.edu/honor. A component vital to the Honor 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. The use of online subscriptions to homework solutions, such as Chegg, constitutes unauthorized aid and is, therefore, a violation of the Honor Pledge.

Professionalism: In addition to following the KSU academic code, I expect you to embrace the standards of excellence and professionalism befitting a practicing sociologist, architect, field biologist, high school teacher, or engineer. Examples of unprofessional behavior include using another’s i-clicker or WebAssign account, programming a calculator to enhance your exam performance, or failing to contribute to the team effort on labs and problem solving exercises. You should also be respectful to your peers and instructors by not disrupting the learning environment of this course. The use of laptop computers, cell phones, head phones, or other electronic devices (except calculators) in lectures or studios is disruptive. The same goes with newspaper reading. These practices are unacceptable. Abusers will lose class participation points and may even be removed from class.

Statement Defining Expectations for Classroom Conduct
All student activities in the University, including this course, are governed by the Student Judicial Conduct Code 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.

Disability: 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.

We will not have class on the following dates:
Mar. 14-18: Spring Break

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