

# Introduction to Physics I

(PHYS-10100-01)  
Fall Semester 2012

Section 1 Professor, Matthew Price CNS 266, [mprice@ithaca.edu](mailto:mprice@ithaca.edu), 274-3894

Section 1 Class meetings: MWF, 8:00 AM - 9:50 AM

Section 2 Professor David Kornreich CNS 331, [dkornreich@ithaca.edu](mailto:dkornreich@ithaca.edu), 274-5176

Section 2 Class meetings: MWF, 12:00 PM – 1:50 PM

Office Hours:

Matthew Price: Monday 3:00 PM – 4: 00 PM, Wednesday 3:00 PM – 4:00 PM,  
Friday 10:00 AM – 11:00 AM – CNS 266

David Kornreich: MWF 10:00 AM – 11:00 AM, Thursday 1:00 PM – 2:00 PM

Please use these office hours or make appointments to get help. Consider them tutoring hours that you have already paid for!

Additional Tutoring:

Additional tutoring outside of class will be available during the semester. An additional review time will be offered prior to exams. If you need additional tutoring contact Academic Enrichment Services

**Prerequisites:** You should have the math placement level of 2. No Physics background needed! Note that we will be using some math in this course. Proficiency with high-school algebra is expected. If you're rusty, don't worry – but DO ASK FOR HELP.

**Course Attendance Policy:** The 2012-2013 Ithaca College Undergraduate Handbook has policies for what constitutes an excused absence as defined by law. These can be found in the **Registration and Course Information** subsection of the **Academic Information** section of the Handbook. The web site is at

<http://ithaca.smartcatalogiq.com/2012-2013/Undergraduate-Catalog/Academic-Information/Registration-and-Course-Information/Attendance-Policy.aspx>

One important aspect of the college attendance policy is:

“A student may be excused for participation in College-authorized co-curricular and extracurricular activities if, in the instructor's judgment, this does not impair the specific student's or the other students' ability to succeed in the course.

For all absences except those due to religious beliefs, the course instructor has the right to determine if the number of absences has been excessive in view of the nature of the class that was missed and the stated

attendance policy. Depending on the individual situation, this can result in the student's being removed from or failing the course."

I reserve the right to begin counting absences as unexcused (0- point) if they become excessive. You will be notified by me by email if I deem this to be the case.

Make sure that you have read and understand this policy, since I will be using it as a guide for excused and unexcused absences. One addendum to the Ithaca College Attendance Policy:

- Pre-arranged medical procedures like:
  - surgery
  - physical therapy
  - dentist or doctor's visit
- medical emergencies (personal or family)

**will** be considered excused absences if I am notified within at least two days of the occurrence.

**You will have two weeks from the time of the excused absence to make arrangements for material missed due to the excused absence.**

Absences that are not covered in the Ithaca College Attendance Policy or my addendum will be non-excused. **Non-excused absences cannot be made up and any graded material will count as a 0. This policy affects all activities associated with this course including exams.**

**Teaching Philosophy:** My philosophy of teaching is a simple one. My goal in any class is to help students learn how observations, intuitions, inferences, and creativity help us to understand the natural world. In other words, I want students in my science class to learn the processes and products of science. With this in mind I approach each interaction with a student as a teaching opportunity. I want to show students the wonders of nature and put them on a path to learning and understanding science and technology in their own chosen fields. I understand that most students in my class will not become professional or even amateur scientists. However, I want students to see that the thinking and reasoning skills learned through science can help them in all aspects of their lives. Also, science interacts with society at all levels and I want you to see that interaction and be able to think about that interaction.

**Grading Policy and Philosophy:** I will award points and apply grade calculations (described in detail below) consistently to all students. The grading scale is not based on a percentage. You receive points for work that you complete. Those points are added together at the end of the semester and your total is compared to the scale. I assign your grade accordingly. **No student will be given preference, extra credit, extra work or projects at any time that are not described in this syllabus.** A popular myth is grading on a "curve" where only a certain percentage of students can receive an A. I have set the bar for the grades based on the point scale given. But, that is as far as it goes. All of the students in this course could possibly earn an A, and that would be okay. However, all students in this class can possibly earn an F as well.

# Course details

## Materials:

College Physics: A Strategic Approach 2nd custom ed. for Ithaca College (ISBN:9780558749255) Includes:

Mastering Physics online homework system

Exerpts from: Tutorials in Introductory Physics, Ranking Task Exercises in Physics, E&M TIPERs, and Electric Circuits

Turning Technologies clicker

**Course web site:** The course website expands upon this document and contains up-to-date course information. It can be found on Sakai. Login at the following address:  
sakai.ithaca.edu

**Textbook:** The textbook is required; we will use both the book and the associated on-line material (Mastering Physics) throughout the semester. The supplemental tutorials and ranking tasks will be utilized in the classroom nearly every day. These supplemental materials will be an additional tool used in helping you to build your knowledge of physics.

**Reading:** Reading the assigned text is required and I will give reading assignments in class and on Sakai. Reading is where you will find definitions and facts. Class meetings will emphasize the biggest and most important concepts and skills. Since there is not sufficient time to cover ALL the material during class, you must read to get the whole picture. Some exam, homework, and quiz questions will come from the reading not covered in class.

## Goals and Outcomes:

- Students will develop an understanding of basic scientific principles inherent in Mechanics.
- Students will develop an understanding of the methods used in physics to study the world, through experiments, observations, evaluation of data and testing of hypotheses.
- Students will: understand models that account for the behavior of mechanical systems; develop a functional understanding of the concepts inherent in those models; learn to use common verbal, diagrammatic, graphical, and mathematical representations of those concepts; and apply those models to the prediction and explanation of real-world phenomena in both a qualitative and a quantitative manner.
- Students will develop their ability to describe a physical system and the behavior of that system.
- Students will learn to approach problems in an organized analytical manner.

**Brief Schedule:**

Weeks 1–4: Kinematics

Weeks 5–8: Dynamics

Weeks 9–10: Rotation

Weeks 11–13: Conservation Laws

Weeks 15–16: Properties of Matter

**Grades:**

Grades will be based on a system with 2000 possible points. The grading scales for both midterm and final grades are shown below.

*Grading Scale:*

Midterm Point range (total 1000 pts.)	Final point range (total 2000 pts.)	Grade
905-975	1860-2000	A
975-904	1800-1879	A-
845-874	1740-1799	B+
805-844	1660-1739	B
775-804	1600-1659	B-
745-774	1540-1599	C+
705-744	1460-1539	C
675-704	1400-1459	C-
645-674	1340-1399	D+
605-644	1260-1339	D
575-604	1200-1259	D-
0-574	0-1199	F

Point totals will be based on the sum of points earned on individual scores. Points allotted for and descriptions of these components are below.

Graded elements of the course:

Component	Points each	Midterm		Final	
		scores counted	point total	scores counted	point total
Participation		All	25	All	50
In Class Concept Question	Var	All	75	All	150
Mastering Physics homework Correct Answers	Var	All	75	All	150
Written homework	20	5	100	10	200
Preliminary exams	300	2	600	3	900
Group Evaluation Problems	50	2	100	3	150
Final exam	400			1	400
Total			975		2000

**In Class Concept Questions:**

During the course of the day students will be asked to participate in a set of questions intended to give feedback to the student and the instructor about student understanding of the concepts currently presented and previously presented. We will use the Turning Technologies clicker to ask student a variety of questions. These questions will use a technique called Think-Pair-Share. Students will be instructed on the proper use of the Think-Pair-Share idea to help their own learning.

**Online homework:**

There will be a homework assignment due **before each** class meeting on Mastering Physics. Mastering Physics is an online homework system that you purchase either with the text or as a separate license online. This tool is designed to help you practice thinking about the material that we will cover in the course. Mastering Physics homework will ask you to solve numerical and conceptual problems. There is evidence that if used correctly by both instructor and

students, there can be a significant increase in your performance on assessments. Most of the numerical work will be given using Mastering Physics.

### **Written homework**

There will also be weekly written homework that will be hand-graded. These written questions will be available on the course website. One page from the homework will be graded in detail for 8 points. An additional 12 points will be given for completing the remainder of the assignment. The homework is designed to help you think in a conceptual manner. There will be small areas for calculation, but most of the questions will be thoughtful conceptual homework based on the tutorials.

### **In-Class-Activities**

In-Class-Activities will often take the form of laboratories and tutorials that will focus on specific concepts or phenomena. Tutorials are based around a methodical set of steps through a conceptual topic. Significant research shows that students will gain a better understanding of conceptual physics if they participate in the tutorials in a genuine and thoughtful manner. Your interaction on the in-class activities will be part of your participation score.

### **Exams**

There will be 4 preliminary exams. The highest 3 scores for preliminary exams will count toward your final grade. Each exam will count for 300 points. The exams will be composed of two parts:

1. 20 multiple choice questions worth 5 points each. These questions will ask varying questions that seek to uncover your understanding of the concepts.
2. 2 written problems worth 100 points each. The written problems will be broken into several parts that will step you through the solution to a more conceptually difficult question compared to the multiple choice questions.

### **Group Evaluation Problems**

Much of this course is based around learning and helping in small groups. During each exam period, you will be given both an exam and a separate group evaluation problem. This group problem will be worth 50 points. A student score on a group problem will be the average of the score of each member of the group. Example: There are three members in your group. After averaging the scores for each of the group members, the score on that part of the exam is 40/50. Each member of the group will be assigned 40/50 points. The topic for the group question on the exam will be given prior to the exam.

## Exam Re-grade Policy

In the course of reading written portions of exams, we are required to read and interpret what you have written on the exam. There are those rare cases when you have written a correct response, but did not receive credit for that response. This is where re-grading comes into effect. Re-grade requests must be submitted in writing as per the request policy defined on the Sakai web site. To ensure consistency, the original grader will assess and respond to the re-grade request. Exam papers that have been marked in any way following their return will not be considered for re-grading.

### Final exam:

The final exam is mandatory. Students must take the final to receive credit for the course. It is worth 400 points. It will consist of approximately 50 multiple choice questions worth 8 points each. The dates and locations are shown below.

**WARNING:** If you need a specific grade in this course to graduate or to progress in your major or program of study, it is your responsibility (and yours alone) to be aware of your performance during the semester and to seek help if you are having trouble or falling behind. I will keep up-to-date records of your scores and will give you all of the tutoring you ask for; it is my job to help you learn the material. However, **I will NOT consider last minute requests for extra work or grade changes even if it means that your final grade will delay your academic plans.**

In compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, reasonable accommodation will be provided to students with documented disabilities on a case-by-case basis. Students must register with the Office of Academic Support Services and provide appropriate documentation to the college before any academic adjustment will be provided.

**Prelim and final exam dates.** Make plans now to be here on the following dates!

Prelim 1	September 21 (Friday), during class time
Prelim 2	October 17 (Wednesday), during class time
Prelim 3	November 2 (Friday), during class time
Prelim 4	November 30 (Friday), during class time
Final Exam Section 1	December 21 (Friday), 1:30 PM – 4:00 PM

Keep these dates in mind as you make travel and other plans during the semester. Since you already know the dates of the exams and since you can drop the lowest exam score, **I do not give makeup exams unless they are excused absences (see Course Attendance Policy).** *A major reason for dropping one Prelim is to account for such absences without the need for rescheduled exams.*

**Academic Honesty and Ethics:** The vast majority of our students are honest and we assume that you will not cheat. Unfortunately, however, people have cheated in this class before, so that we know a lot of the “tricks” that are possible and we have to be careful. Cheating includes plagiarism,\* using forbidden reference materials or talking to other students during exams, or attempting to gain advantage by obtaining and/or using unauthorized homework or exam questions/solutions or information about those assignments prior to the homework due date or exam date. I have a zero tolerance approach to cheating; innocent cheating is still cheating.

**\* Plagiarism includes handing in any material as your own work for credit in this class that is actually the work of another person without reference to the source. COPYING another person’s work, even when you find it on-line, IS PLAGIARISM.**

**If you are unsure of the source of information you use in an assignment, it is almost certainly not your work and you are in danger of cheating. If you are looking at someone else’s work as your write your own, even with the person’s consent, you are probably cheating. When in doubt, ask your professor or instructor. “Innocent” cheating is still cheating.**

**Ithaca College policy calls for strict sanctions on the FIRST offense to any student caught cheating AND to all other students involved.** If the incident involves students not enrolled in Physics 174, those students are also subject to academic disciplinary action under Ithaca College policy. These policies are described in the “Ithaca College Student Handbook.” **I will refer suspected cases of misconduct to the proper IC authorities with no exceptions.**