

18 Aug 2010

## Class Information



<b>Lecture</b>	Lecture Room 2, VAN
	11:30-12:20 Monday, Wednesday, Friday
<b>Labs</b>	only if registered for 4 S.H.
<b>Text</b>	The Physics of Everyday Phenomena, Sixth Edition, W. Thomas Griffith
<b>Drop/Add</b>	All drop, add, and section changes must be done in the department's main office, room 203 VAN
<b>Prerequisites</b>	Algebra (22M:002 or equivalent) and trigonometry (22M:005 or equivalent) Course is closed to students who have taken 029:011 or 029:012.
<b>Website</b>	<a href="http://dusty.physics.uiowa.edu/~goree/teaching/29_008_2010.html">http://dusty.physics.uiowa.edu/~goree/teaching/29_008_2010.html</a>
<b>Dept. DEO</b>	Professor Mary Hall Reno, 203 VAN
<b>Objective of the Course</b>	This one-semester course is an introduction to the way physics helps you understand the world around you. You will learn physics concepts and how to combine them with mathematics to solve problems. You will learn an objective and analytical way of thinking that will be useful in areas outside physics.
<b>Description of the Course</b>	<ul style="list-style-type: none"> <li>• The course is offered as both 3 S.H. and 4 S.H.</li> <li>• Students enrolled for 4 S.H. take a lab.</li> <li>• Topics: concepts and quantitative treatment of mechanics, electricity, heat, liquids, gases, and atomic, nuclear, and elementary particle physics.</li> </ul>
<b>Requirements met by this course</b>	<ul style="list-style-type: none"> <li>• GE Natural Sciences</li> <li>• Preprofessional requirements in pharmacy, medical technology, nursing, and speech pathology.</li> <li>• Does not meet preprofessional requirements for medical and dental schools.</li> </ul>

<b>Instructor:</b>	John A. Goree
<b>Office:</b>	512 Van Allen Hall
<b>E-mail:</b>	<a href="mailto:john-goree@uiowa.edu">john-goree@uiowa.edu</a>
<b>Phone:</b>	319-335-1843
<b>Office Hours:</b>	Mo Tu Fr 10:00 – 11:00, or by appointment

# Grades



## What determines your grade:

- **Students enrolled for 3 S.H.:**
  - **Course GPA = lecture grade**
  - Plus/minus grades (+/-) will be awarded
- **Students enrolled for 4 S.H.**
  - **Course GPA = 75% lecture grade + 25% lab grade**
  - This weighting assures that the contribution of the *lecture* portion of the course to your University GPA will be the same, regardless of whether you are enrolled for 3 or 4 S.H.
  - Plus/minus grades (+/-) will be awarded
- **Lecture grade (3 S.H.):**
  - Average of four exams, weighted equally.
  - Curve:
    - I will rank everyone in the class, from top to bottom, according to their total of four exam scores, and I will assign a grade according to your percentile ranking and this curve:

4.3	2%	A+
4	11%	A
3.7	5%	A-
3.3	4%	B+
3	15%	B
2.7	5%	B-
2.3	11%	C+
2	13%	C
1.7	11%	C-
1.3	4%	D+
1	6%	D
0.7	4%	D-
0.3	2%	F
0	7%	F

- (Note: a grade of 0.3 will be reported as an F).
- To predict your grade, you may compare your exam scores to the histograms on ICON.
- **Laboratory grade (1 S.H. portion, for 4 S.H. students only):**
  - Lab grade:
    - If you complete < 12 labs: *zero* (i.e., F) for the *entire* lab grade
    - If you complete 12 labs: The 12 labs averaged together with a zero for one lab
    - If you complete 13 labs: The average of the 13 labs (*this is what I expect you to do*).
    - A and A- are the most common grades for students who complete 13 labs.
    - Grades are higher for the lab than the lecture. The lab is designed for success, not frustration, so that almost every student can successfully complete every lab.
  - The 14th lab is intended only as a makeup for students who missed a lab; if a student completes 14 labs, only the first 13 will be used in calculating the lab grade.

- **Attendance:**

- *Laboratory* attendance is recorded. It is a factor in calculating the laboratory grade.
- *Lecture* attendance is not recorded. Attending the lecture will help you with the homework and exams, but it is not required.

- **FAQs about grades:**

- *Can I receive “extra credit”?*

No, there are no “extra credit” activities. Your grade is determined only as described above.

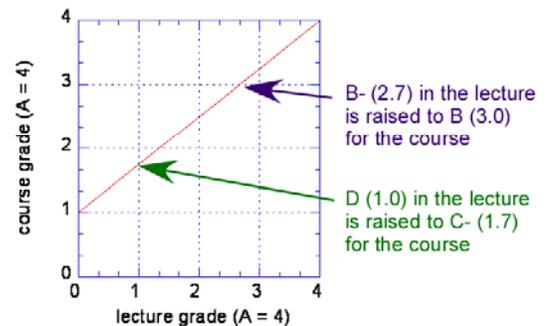
- *I’m disappointed with my exam grade. What can I do differently next time?*

See “The most effective way to study,” below.

- *Will my course grade be better if I take the lab?*

If you have a low lecture grade (your four exams), your lab grade will likely be much higher. This will improve your course grade. See graph.

illustration of how an A in the lab would affect the course grade



**ICON:**

For this course, use <http://icon.uiowa.edu/> for password-protected viewing of:

- ICON “Grades”
  - your exam grades
  - your seat assignment for an upcoming exam
- ICON “Content”
  - homework solutions, released on scheduled dates
  - sample exam questions (multiple-choice format)
  - powerpoint files for the exam review sessions
  - lab manual PDF files

# Exams



## EXAMS:

### How many:

- Four total:
  - Three exams during the semester
  - Final exam - just like the other three exams; it's not comprehensive

### What they're like:

- All exams are multiple choice, with 20 questions.
- Some questions will be conceptual with a descriptive answer, like the "questions" in the homework, while others will require calculation, like the "exercises" in the homework.
- Questions will be based mainly on homework. To a lesser extent they are based also on the lecture and textbook. No exam questions are based on the labs.
- You will be provided the list of "Physical Constants" from the inside front cover of your textbook (and for the last exam you will also be provided a Periodic Table of the Elements).
- Seats will be assigned. **Find your seat number in advance, online on ICON.**
- *Lefties*: if you prefer a left-handed seat, please email me no later than the second week of class.
- You will hand in both your question sheet & answer sheet.
- Efforts are made to prevent and detect cheating on exams.

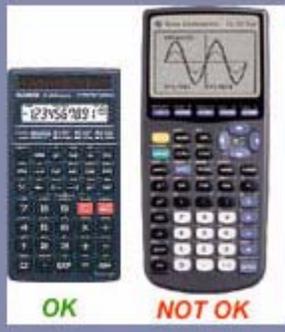
### What to bring:

- Bring a pencil, an eraser, and a calculator. See allowed calculator types, below.
- You may bring a single 4"X6" note card with your notes, handwritten in your own handwriting, on both sides. Otherwise, no books, notes or electronic devices are permitted.
- Tip: write your seat number and student ID on your 4"X6" note card before the exam so that you will remember them.
- No hats may be worn.

### The most effective way to study:

- The exams are based most closely on the homework, so the homework is the central part of your learning experience.
- *Before* you do homework problems:
  - read the book before the lecture
  - attend the lecture
  - review your lecture notes the same day as the lecture
  - work through example questions & example exercises in the textbook
- *Then* do the homework, and correct it using the solutions posted on ICON
- *Before your exam*:
  - Review your completed homework, and be sure that you can do the problems. Remember that the exams are based most closely on the homework. *If you can do all the homework problems, you will be in good shape for the exam.* Review your lecture notes and, less critically, your textbook.
  - Prepare your 4" X 6" note card.

## Calculators in Exams



### CALCULATORS:

- A simple scientific calculator that does arithmetic, squares and exponents, roots, trig functions, and scientific notation, is best for the exams. It should have a numerical display only.
- In exams, you are not permitted to use a calculator with networking capability or a display capable of showing graphs, formulas, or text messages.

## Homework



### HOMEWORK:

#### The role of homework:

- Homework is the central part of your learning experience, aside from the lab.
- The lecture helps prepare you to do the homework.
- *The exams test what you learned while doing the homework.*
- Homework is neither collected nor graded; nevertheless, if you wish to perform well in the course, you must do it.

#### Solutions:

- You may see the solutions to the homework on ICON, after the date shown on the schedule.

#### Help with homework:

- You may seek help in doing the homework from anybody you wish, including:
  - Any 29:008 TA, during office hours or after lab. Students in 29:008 may seek help from a 29:008 TA even if you are not enrolled in a lab.
  - TAs in the Tutorial Room 54 VAN
  - Prof. Goree during office hours or by appointment

**Administrative Home**

The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS [Student Academic Handbook](#).

**Electronic Communication**

University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondences. (*Operations Manual*, [III.15.2](#). Scroll down to k.11.)

**Accommodations for Disabilities**

A student seeking academic accommodations should first register with Student Disability Services and then meet privately with the course instructor to make particular arrangements. See [www.uiowa.edu/~sds/](http://www.uiowa.edu/~sds/) for more information.

**Academic Fraud**

Plagiarism and any other activities when students present work that is not their own are academic fraud. Academic fraud is a serious matter and is reported to the departmental DEO and to the Associate Dean for Undergraduate Programs and Curriculum. Instructors and DEOs decide on appropriate consequences at the departmental level while the Associate Dean enforces additional consequences at the collegiate level. See the CLAS Academic Fraud section of the [Student Academic Handbook](#).

**CLAS Final Examination Policies**

Final exams may be offered only during finals week. No exams of any kind are allowed during the last week of classes. Students should not ask their instructor to reschedule a final exam since the College does not permit rescheduling of a final exam once the semester has begun. Questions should be addressed to the Associate Dean for Undergraduate Programs and Curriculum.

**Making a Suggestion or a Complaint**

Students with a suggestion or complaint should first visit the instructor, then the course supervisor, and then the departmental DEO. Complaints must be made within six months of the incident. See the CLAS [Student Academic Handbook](#).

**Understanding Sexual Harassment**

Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI [Comprehensive Guide on Sexual Harassment](#) for assistance, definitions, and the full University policy.

**Reacting Safely to Severe Weather**

In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Public Safety [web site](#).

## Lab sections



### Lab Sections:

<i>sec</i>	<i>day</i>	Time and room
21	Tu	<del>8:00A - 10:50A , 361 VAN</del>
23	Tu	11:30P - 2:20P , 267 VAN
25	Tu	3:30P - 6:20P , 267 VAN
27	Mo	7:00P - 9:50P , 267 VAN

## Labs



### Who takes the lab:

- Only students enrolled for 4 S.H. credit will take the lab portion of the course.

### Who teaches the lab:

- Lab sessions are conducted by a teaching assistant under the supervision of Prof. Goree and the department's Lab Coordinator.

### Lab attendance:

- *Attendance* is required for 4 S.H. students; attendance will be recorded at the beginning of the session. You should arrive early, because you will be penalized if you arrive late. To receive full credit for attendance, you must also bring your own printed copy of the lab manual and worksheet for today's lab.

### How many labs you'll do:

- 13 is the normal number of labs to complete.
- 14 labs are scheduled, but the last one is for make-up only. Your grade will not be improved by taking 14 labs instead of 13.
- A minimum of 12 labs must be completed to receive a passing grade for the lab. See the lab grading info.

### What to bring to lab:

- Your own printed copy of the lab manual and worksheet for today's lab. Be sure to bring the right one – check the schedule below.
- Calculator.

### If you miss a lab:

1. You may do the 14th lab during the last week of the semester.
2. Making up a lab by attending another section is discouraged. According to departmental policy: only if all three of the following conditions are satisfied will you be allowed to make up a lab by attending another section:
  - You must get approval, one week in advance, from both your TA and the TA of the lab section you wish to sit in on; and
  - The lab section you wish to sit in on is not full; and
  - The lab section you wish to sit in on does not have other "visitors" that day.

### Lab manual

- The lab manual is needed only for 4 S.H. students
- You must print this manual yourself – do this before the first lab
- Print two PDF files from ICON:
  - manual  $\approx$  248 pages (okay to print double sided)
  - worksheets  $\approx$  37 pages (print *single sided only*)
  - You may use your own printer, or take the file to a copy store
  - Local copy store: typical cost \$26 ( 9¢ single sided, 17¢ double)
  - The document has color photos, but black & white printing is perfectly okay
- I distribute the manual this way to reduce your cost.

### LAB SCHEDULE

29:008

Fall 2010

<i>week beginning</i>	<i>how many labs</i>	<i>lab</i>
23 Aug		no lab
30 Aug	1	M2 Kinematics with Constant Acceleration
6 Sep	2	M3 Projectile Motion
13 Sep	3	A4 Hooke's Law
20 Sep	4	M5 Conservation of Energy
27 Sep	5	A1 Precision Measurements
4 Oct	6	A6 Bernoulli Effect and Flow Rate
11 Oct	7	H2 Mechanical Equivalent of Heat
18 Oct	8	H3 Specific Heat
25 Oct	9	E1 Charge Measurement
1 Nov	10	E5 Ohm's Law
8 Nov	11	W1 Speed of Sound
15 Nov	12	OP5 Diffraction: grating & slit
29 Nov	13	OP3 Thin Lenses
6 Dec	14 <b>makeup only</b>	Q6 Geiger Counters

## LECTURE SCHEDULE

29:008

Fall 2010

<i>Week</i>	<i>Day</i>	<i>Topics</i>	<i>Sections to read</i>	<i>Homework Questions (Q)</i>	<i>Homework Exercises (E)</i>	<i>Posted on ICON</i>
23 Aug	M	1. Scientific Method, Scope of Physics	Sec. 1.1-1.4 Appendices A & B	11,13	7,11	Exam 1 Sample
	W	2. Description of Motion	Sec. 2.1 - 2.4	9,10,15,18	5,11,12	
	F	3. Uniformly Accelerated Motion	Sec. 2.5	19,25,29	13,15	HW Chapter 1
30 Aug	M	4. Acceleration due to Gravity	Sec. 3.1 - 3.3	4,10,14	3,7,8,9	
	W	5. Projectile Motion	Sec. 3.4 - 3.5	17,20,23	11,15,16	HW Chapter 2
	F	6. Newton's First and Second Laws of Motion	Sec. 4.1 - 4.3	7,8,9,11,12,15	4,7,11	
6 Sep	M	<b>HOLIDAY</b>				
	W	7. Newton's Third Law of Motion	Sec. 4.4 - 4.5	20,23,26	16,17,18	HW Chapter 3
	F	8. Circular Motion and Centripetal Acceleration	Sec. 5.1 - 5.2	9,12,13	1,4,7	
13 Sep	M	9. Planetary Motion & Newton's Law of Gravitation	Sec. 5.3 - 5.5	22,23,29	10,11,14	HW Chapter 4
	W	10. Work, Kinetic Energy, and Potential Energy	Sec. 6.1 - 6.3	3,4,5,8	1,4,6,7,9	
	F	Review for Exam #1	Chapters 1-5			HW Chapter 5
20 Sep	M	<b>Exam 1</b>	Chapters 1-5			
	W	11. Conservation of Mechanical Energy	Sec. 6.4 - 6.5	12,22,31,33	11,14,15	
	F	12. Momentum & Conservation of Momentum	Sec. 7.1 - 7.3	6,9,13,22	5,9,11,13	
27 Sep	M	13. Elastic and Inelastic Collisions	Sec. 7.4 - 7.5	29,31,32	14,15,16,18	HW Chapter 6
	W	14. Rotational Motion	Sec. 8.1 - 8.3	5,6,11,21	3,7,9,11	
	F	15. Conservation of Angular Momentum	Sec. 8.4 - 8.5	24,26,29,30	14,15,18	HW Chapter 7
4 Oct	M	16. Fluids at Rest	Sec. 9.1 - 9.3	5,12,19,22	2,5,9,11,13	
	W	17. Fluids in Motion	Sec. 9.4 - 9.5	24,25,31	14,15,16	HW Chapter 8
	F	18. Heat	Sec. 10.2 - 10.2, 10.5	9,13,15,18	1,3,7,10	
11 Oct	M	Review for Exam #2	Chapters 6 - 9			HW Chapter 9, Exam 2 Sample
	W	<b>Exam 2</b>	Chapters 6 - 9			
	F	19. First Law of Thermodynamics	Sec. 10.3 -10.4	21,25,30,31	13,16,18	

18 Oct	M	20. Heat Engines	Sec. 11.1 - 11.3	3,5,9,13	1,3,5,7	
	W	21. Second Law of Thermodynamics	Sec. 11.2 - 11.5	19,22,24,32	9,11,13	HW Chapter 10
	F	22. Electric Charges & Coulomb's Law	Sec. 12.1 - 12.3	5,7,11,17	1,5,7,8	
25 Oct	M	23. Electric Field and Electric Potential	Sec. 12.4 - 12.5	20,23,27,31	9,11,13,16	HW Chapter 11
	W	24. Simple Electric Circuits	Sec. 13.1 - 13.3	2,6,11,13,14	2,5,9,12	
	F	25. Electric Energy & Power	Sec. 13.4 - 13.5	18,19,22,23	13,14,15,SP5	HW Chapter 12
1 Nov	M	26. Magnetic Fields	Sec. 14.1 - 14.3	4,8,10,13	2,3,6,7	
	W	27. Electromagnetic Induction	Sec. 14.4 - 14.5	15,23,25,30	9,11,13	HW Chapter 13
	F	28. Waves	Sec. 15.1 - 15.3	1,5,10,13,19	3,4,5,7	
8 Nov	M	Review for Exam 3				HW Chapter 14, Exam 3 Sample
	W	<b>Exam 3</b>	Chapters 10 - 14			
	F	29. Sound	Sec. 15.4 - 15.5	25,26,27,28,29	9,11,13,16	
15 Nov	M	30. Electromagnetic Waves	Sec. 16.1 - 16.3	3,6,10,13	1,3,5,7	
	W	31. Physical Optics	Sec. 16.4 - 16.5	20,22,23,27	9,11,13	HW Chapter 15
	F	32. Geometrical Optics	Sec. 17.1 - 17.4	3,9,17,25	1,3,5,8	
<b>THANKSGIVING RECESS</b>						
29 Nov	M	33. Atomic Structure	Sec. 18.1 - 18.3	5,7,11,13,17	1,3,5	HW Chapter 16
	W	34. Quantum Mechanics of Atoms	Sec. 18.4 - 18.5	19,24,26,28,29	7,9,11	HW Chapter 17
	F	35. Nuclear Structure	Sec. 19.1 - 19.2	3,5,7,9,13	1,3,5	
6 Dec	M	36. Nuclear Reactions	Sec. 19.3 - 19.5	15,19,20,23,28	7,9,11	HW Chapter 18
	W	37. Special Relativity	Sec. 20.1 - 20.3	5,7,14,17,19	3,5,9	HW Chapter 19
	F	38. Quarks & Cosmology & Review for Exam 4	Sec. 21.1 - 21.2	2,3,4,8,12	none	HW Chapter 20, 21 Exam 4 Sample

14 Dec	Tu	<b>Exam 4</b> 12 pm, in the same lecture hall where our lectures are held This exam covers only Chapters 15-21				
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