

**Syllabus PHY 231 & PHY231C – FALL 2008**

- **Course website:** <http://www.nscl.msu.edu/~zegers/phy231.html>

- **Instructors**

Marc Doleans (MWF 8:00-8:50 am – section 001)

Room 170C Cyclotron Building

Phone: 517-324-8181

email: doleans@nscl.msu.edu

Office hours: Thursday 11 am – noon in the helproom (BPS 1248)

Remco Zegers (MWF 9:10-10:00 am–section 002 & Online sections 730-731)

Office W109 Cyclotron Building

Phone: 517-333-6473

email: zegers@nscl.msu.edu

Office hours: Thursday 3 pm – 4 pm in the helproom (BPS 1248)

Filomena Nunes (MWF 10:20-11:10am–section 003&Online sections 730-731)

Room 219 Cyclotron Building

Phone: 517-333-6471

email: nunes@nscl.msu.edu

Office hours: Wednesday 3-4 pm in the helproom (BPS 1248)

Each of the instructors will have an office hour. If you can't make it to the office hours and need to contact the instructor, send an email and, if necessary, make an appointment. When sending an email, make sure to use your msu email, since email sent from yahoo/gmail etc can get blocked by SPAM filters. Contact by phone only in case of an emergency.

- **Teaching Assistants:**

- Jenni Portman (Graduate TA)
- Saurabh Gujarathi (Graduate TA)
- Bai Nie (Graduate TA)
- Zhensheng Tao (Graduate TA)
- Roman Senkov (Postdoctoral Researcher)

- **Course description:** non-calculus-based general physics, recommended for a variety of majors, such as those pursuing a pre-med education. Topics include: Newtonian equations of motion, momentum and energy conservation, rotational motion, gravity, thermodynamics and wave motion.

- **Textbook: College Physics, Volume 1, 8th edition by Serway and Vuille.** Earlier editions (6,7) of College Physics, Volume 1 by Serway and Faughn, or the special soft cover MSU edition are also okay. These earlier editions should be available second-hand (no longer sold by bookstores). **Note: don't buy College Physics, 8th edition, full version (includes Volume 1 and 2), since for PHY232, a different textbook will likely be used.** If you can find a second-hand version of College Physics (editions 6,7 full version) that is



cheaper than Volume 1, 8th edition, it is still worth buying the full version. If you buy the latest edition of the textbook from the bookstore, it will come with a coupon for the I-clicker, used for in-class quizzes (PHY231 only)

- **Prerequisites:** MTH 103 or MTH 116 or LBS 117 or MTH 124 or (MTH 132 or concurrently)
- **Not open to students with credits in:** LBS 164 or PHY 181B or PHY 183 or PHY 183B or PHY 193H or PHY 231B or PHY 231C

Course material and exam/homework/quiz information.

• Readings

- **For PHY231 students:** it is highly encouraged to read the relevant chapters before coming to class. Note that not everything covered in the textbook can be covered in class, but could appear as homework, quizzes or part of the exams. In LON-CAPA, you will also find a 'Virtual Textbook', which covers the basics of the material.
- **For PHY231C students:** Of course reading the book is even more essential than for the lecture course students, since you won't be attending class. In addition, feel free to access the lecture notes that each of the lecturers post online. The lecture notes of Prof. Zegers will hold many worked-out examples for this purpose. In LON-CAPA, you will also find a 'Virtual Textbook', which covers the basics of the material.

• Helproom

- The Strosacker Physics Learning Center (BPS 1248) will be available to work with other students on the homework. TAs will be present to answer questions.
- **Helproom hours:** The exact hours will be announced in the first week of class. The helproom will be open starting in week 2 of classes (week of September 1st).

• Homework

- There will be **11** homework assignments, **due Friday's at 6 pm.** (homework set 0, is a practice set and is not graded.) The homework sets are distributed through the LON-CAPA online system (<http://msu.lon-capa.org>). When logging in using your MSU pilot username and password, please make sure to enable 'Cookies' and 'Java-script' in your browser. After logging in, navigate to the PHY231 class and locate the folder 'Homework sets'.
- Note that the deadline for submitting your homework is very strict. Make sure not to wait until the last moment to do your homework and to have access to a reliable internet connection.
- **Communicating inside & outside LON-CAPA:** It is strongly encouraged to work together, if you feel it is beneficial for your understanding of the material. Besides meeting, there is also a



communication tool available in LON-CAPA, reachable using the 'post discussion' link under each problem. You can post questions or respond to other peoples' questions. You can post comments anonymously if you wish (Course instructors will however always be able to see your name.) **Working together can be very helpful, but simply copying homework assignments will, in general, be very detrimental to your overall score, since you might not be able to do many of the exam problems.**

- **Quizzes (NOT FOR PHY231C STUDENTS)**
 - Multiple-choice quizzes for extra credit will be given randomly in class during the semester. You will need an "i-clicker" to participate in these quizzes.
 - It is strictly forbidden to bring clickers of fellow students who are not present during the lecture.
 - **You have to enter your clicker ID number in Lon-Capa before Monday 8 September).**
- **Exam information:**
 - There will be **two midterm exams** during regular class hours. The exams will be closed book, but you may use one (double-sided) 8-1/2x11" sheet of notes and equations. Exams may contain material from the textbook, homework and quizzes. About half of the exam will consist of conceptual questions and the rest of numerical problems.
 - There will be one 2-hour final exam at a place and time to be announced. 3 8-1/2x11" sheets of notes may be brought into the exam. The final exam is cumulative (i.e. covers all material).
 - Students must work individually and people observed exchanging information before all exams are handed in will be given a zero.
 - You will need a calculator, a #2 pencil and your student ID when taking an exam.
 - **It is important to note that the exams will NOT be LON-CAPA style. Do not expect to get problems on exams that are exactly the same homework problems, i.e. memorizing homework problems will not be a guarantee for a high score.**
 - **Make-ups: Attendance of a make-up exam requires approval from the instructor and evidence of a serious conflict (e.g. Doctor, Dean, Coach etc) must be provided before the exam date. As a rule, make-up exams are scheduled BEFORE the regular exam dates.**
 - **Students in PHY231C (sections 730/731) who need to take exams off-site (i.e. not on the MSU campus) should contact Prof. F. Nunes (nunes@nscl.msu.edu) before September 2st for instructions and regulations.**



Grading criteria

Grades are assigned based on homework, exams and quizzes as follows:

- **Homework:** 20% of the grade. You can miss 10% of the homework problems and still get the maximum credit for the homework. If you can't make a deadline for a good reason (e.g. sickness) contact your instructor to move the deadline.
- **Midterm exams (2):** 20% each.
- **Final exam:** 40%
- **Extra Credit Quizzes (PHY231 only):** For up to 5% extra credit, graded based on 75% of the quizzes given (meaning that you can miss 25% of the quizzes and still get the full extra credit). Corrections to your extra credit score are **NOT** made if you forget your clicker for a class, fail to check the battery and it runs out during class or miss a class/leave before the quiz is given/are too late for the quiz. If you miss **several subsequent** quizzes (i.e. NOT a single missed quiz because of a cold) because of sickness or other good reason, contact your instructor. He/she may request a doctor's note or other relevant proof that you had to miss those classes.
- **Extra Credit (PHY231C only):** Since people in the online course cannot use quizzes to obtain extra credit, extra credit opportunities will be part of the regular exams. Details will be given before each exam.
- **Grading Scale:** The course will be graded according to the grading scale in the table below. The requirements for a given grade may be lowered, but will not be raised.

Grade Awarded	4.0	3.5	3.0	2.5	2.0	1.5	1.0
Minimum Average	92%	84%	76%	68%	60%	52%	44%

- **Honors option:** Honors options will not be available for PHY231 or PHY231C in Fall of 2008.

Calendar

Week	Week of	Topic	Chapter	Homework*
1	8/25	Introduction, motion in 1D	1,2	-
		9/1 Holiday – No classes		
2	9/1	Motion in 2D, vectors	3	Set 1 (ch. 1,2)
3	9/8	Laws of motion	4	Set 2 (ch. 3)
4	9/15	Energy	5	Set 3 (ch. 4)
	9/18	End of tuition refund		
5	9/22	Momentum and Collisions	6	Set 4 (ch. 5)
6	9/29	Mon. 9/29 Review, Wed. 10/1 Exam	6,7	No homework
7	10/6	Rotational Motion and Gravity	7	Set 5 (ch. 6)
8	10/13	Rotational Equilibrium & Dynamics	8	Set 6 (ch. 7)
		10/14 Middle of Semester		
9	10/20	Solids and Fluids	9	Set 7 (ch. 8)
10	10/27	Thermal Physics	10	Set 8 (ch. 9)
11	11/3	Mon 11/3 Review, Wed. 11/5 Exam	11	No Homework
12	11/10	Energy in Thermal Processes	11	Set 9 (ch. 10)
13	11/17	Laws of Thermodynamic	12	Set 10 (ch. 11,12)
14	11/24	Vibrations and waves	13	No Homework
		Thanksgiving – No classes 11/28		
15	12/1	Sound, 12/5 review	14	Set 11 (ch. 12, 13,14)
16	12/8	Final exam – date TBA		

- *homework is due on Friday at 6:00 pm
- Midterm I: Chapters 1-5, homework sets 1-4
- Midterm II: Chapters 6-9, homework sets 5-8
- Final: All chapters, all homework sets