

**Syllabus PHY 232 – Spring 2007**

- **Course website:** <http://www.nsl.msu.edu/~zegers/phy232.html>

- **Instructors**

Tibor F. Nagy (**MWF 12:40-1:30 pm – section 003**)

Room 1253 BPS

Phone: 517-355-9200 x2515

email: mailto:nagy_t@pa.msu.edu

Office hours: place BPS 1248 (Helproom) on Monday from 4:30-5:30 or by appointment

Remco G. Zegers (**MWF 1:50-2:40 pm – section 001**)

Office W109, Cyclotron Building

Phone: 517-333-6473

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Office hours: place BPS 1248 (Helproom) on Monday from 3-4 pm or by appointment.

Jon Pumplin (**MWF 3:00-3:50 pm – section 002**)

Room 3240 BPS

Phone: 517-355-9200 x2126

email: <mailto:pumplin@pa.msu.edu>

Office hours: Tuesday 3:30-4:30 pm in 3240 BPS and Tuesday 4:30-5:30 pm in BPS 1248(helproom).

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 often get blocked by SPAM filters.

- **Teaching Assistants:**

- James Laverty
- Andrew Ratkiewicz
- Rita Lau

- **Course description:** Electricity and magnetism; optics; atomic, nuclear, and particle physics. Algebra-based.
- **Textbook:** College Physics, Volume 2: PHY232 by Serway & Faughn. This is a soft cover edition especially made for MSU. Using editions 5,6 or 7 which come in hardcover, either as one thick book (i.e. also including the PHY231 chapters) or as two books (one containing the chapters for PHY231 and the other for PHY232), is perfectly fine as well.
- **Prerequisites:** PHY 231 or PHY 231B or PHY 181B or PHY 183 or PHY 183B or LBS 271 or PHY 193H or PHY 231C



- **Not open to students with credits in:** PHY 184 or PHY 184B or PHY 232B or LBS 272 or PHY 182B

Course material and exam/homework/quiz information.

- **Readings**

- To prepare yourself most efficiently, it is strongly encouraged to read the relevant chapters of the textbook before coming to class (see calendar). Moreover, lecture notes will be posted online. Note that not everything covered in the textbook can be covered in class, but could appear as homework, quizzes or part of the exams.

- **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
 - Friday 10am-3pm
 - Monday 10am-9pm
 - Tuesday 9am-9pm **Homework due at midnight.**

- **Homework**

- There will be 14 homework assignments, including three midterm correction sets, **due every Tuesday evening at Midnight, except for sets 1 which is due on Wednesday 17 January because of Martin Luther King day.** 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 PHY232 class and locate the folder 'Homework sets'.
- Homework sets will be open for answering about two weeks before the set is due. 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.
- If you are not able to do a homework set for a good reason (e.g. sickness), contact your instructor so that the deadline can be extended.
- **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 in for example the helproom, 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**

- Multiple-choice quizzes for extra credit will be given randomly in class during the semester. You will need a HITT 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 midnight, Friday 19 January).**

- **Exam information:**

- There will be **three midterm exams** during regular class hours. The exams will be closed book, but you may use one (double-sided) 8 1/2x11" sheet of **hand-written** 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. **The homework set due after the midterm is a correction set for the midterm and 30% of the difference between the score you achieved on the midterm and the correction set will be added to your midterm score, if to your advantage.**
- There will be one 2-hour final exam at a place and time to be announced. 3 8 1/2x11" sheets of **hand-written** 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.
- **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.**

**Grading criteria**

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

- **Homework:** 10% of the grade. All sets are graded, so if you can't make a deadline for a good reason (e.g. sickness) contact your instructor to move the deadline.
- **Midterm exams (3):** 20% each. The homework set due after the midterm is a correction set for the midterm and 30% of the difference between the score you achieved on the midterm and the correction set will be added to your midterm score, if to your advantage.
- **Final exam:** 30%
- **Quizzes:** For up to 5% extra credit, graded based on 80% of the quizzes given. If you score more than 80% on the quizzes, your extra credit will exceed 5%. The details of the quiz scoring/taking may vary from section to section. **Test your clicker before each lecture and contact the lecturer in case of a malfunction.**
- **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:** If you are interested in pursuing an honors option, contact your instructor in the first week of class. You will have to serve in the helproom and score at least a 3.0 for the course.

Calendar

Week	Week of	Topic	Chapter	Homework*
1	1/8	electric forces & fields	15	
	1/15	Martin Luther King Day-no classes		
2	1/15	electrical energy and capacitance	16	Set 1 –Ch.15
3	1/22	current and resistance	17	Set 2 –Ch.16
4	1/29	DC circuits, review+Midterm I (Friday)	18	Set 3 –Ch.17
	2/2	End of tuition refund		
5	2/5	DC circuits + magnetism	18/19	M1 corrections
6	2/12	induced voltages and inductance	20	Set 4 –Ch.18
7	2/19	AC circuits and EM waves	21	Set 5 –Ch.19
8	2/26	reflection and Refraction of light	22	Set 6 –Ch.20
9	3/5	Spring Break		
10	3/12	Optics, review+Midterm II (Friday)	23	Set 7 –Ch.21
11	3/19	Optics/wave optics	23/24	M2 corrections
12	3/26	optical instruments	25	Set 8 –Ch.22/23
13	4/2	Relativity+Quantum	26/27	Set 9 –Ch.24/25
14	4/9	Quantum+ review+Midterm III(Friday)	27	Set 10 –Ch.26/27
14	4/16	atomic physics	28	M3 corrections
15	4/23	nuclear physics+review	29	Set 11 –Ch.28/29
16	4/30	Final exam	All	

- *homework is due on Tuesday's at midnight, except for sets 0/1 which are due on Wednesday the 17 January because of Martin Luther King Day. Correction sets for midterms are due on Friday at Midnight, in the week after the exam.
- Midterm I: chapters 15,16,17
- Midterm II: 18,19,20,21
- Midterm III: 22,23,24,25,26