

PHYS 1112: Introductory Physics – Optics, Electricity & Magnetism

Section: 25674; TH 9:30 A.M. - 10:45 A.M.

Lecture Location: Science Learning Center (SLC), Room 085

Office hours: TH 11:00 A.M. - 12:00 P.M.

Instructor: Professor William M. Dennis

Office: Room 206, Physics Building

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I. GENERAL INFORMATION

- Primary method of communication: during office hours; email through: phys1112wmd@physast.uga.edu
- Text: James S. Walker, Physics, Volume II 4th edition (Black Cover, 2009). (3rd edition (Blue Cover, 2007) is fine, but **you will be responsible** for knowing about any changes in content.) The bookstore describes the text as: **Physics (Vol 2)(w/MasteringPhysicstext VP Acc)** Edition: N/A. Make sure you get a copy that says: **w/MasteringPhysics**.
- Mastering Physics: To register use Course Code: **MPDENNIS43257** – You will need to enter your 81X number. **Enter 9 digits only – do not enter the last digit.**
- You will also need a clicker for this course. Pick only 1 of the following 2 choices.
 - **Turning Point Cloud (1 Year Access Code)** Edition: N/A
 - **QT Response Device + 5 Year License** Edition: N/A

II. ACADEMIC HONESTY

- The University of Georgia has a comprehensive policy on academic honesty, described in a document entitled “A Culture of Honesty.”
- The document is available through the Office of the Vice President for Instruction or online at <https://ovpi.uga.edu/academic-honesty>.
- The policy covers all academic work. As a UGA student, you are responsible for knowing and understanding this policy.
- If you have any question about the appropriateness of your actions or your work, you are obligated to ask me for clarification.

III. IN-CLASS RULES

- No laptops, pagers, cellphones, iPads, iPods, or any other electronic/communication devices are permitted in the classroom.
- Students must attend the sections they are assigned to. No attendance credit will be given if you attend a “wrong” section.

IV. GRADING POLICY

- Overall grade will be determined as follows:
 - 20% LAB grade (attendance mandatory; see Section V for details)
 - 15% HOMEWORK (no makeup; working in groups OK; must be submitted individually)
 - 3% Reading Assignments / Quizzes
 - 2% Participation (attendance mandatory; see Section VIII for details)
 - 60% EXAM 1 (no makeup; must be taken with the section you are registered for)
 - EXAM 2 (no makeup; must be taken with the section you are registered for)
 - EXAM 3 (no makeup; must be taken with the section you are registered for)
 - EXAM 4 (no makeup; must be taken with the section you are registered for)
 - EXAM 5 (no makeup; must be taken with the section you are registered for)
 - Worst of 5 exams dropped**
 - 100% TOTAL
 - Letter grades will be assigned in accordance with the following cut-offs (for additional rules see below):
 - F: [0, 55)
 - D: [55, 65)
 - C-: [65, 68) C: [68, 72) C+: [72, 75)
 - B-: [75, 78) B: [78, 82) B+: [82, 85)
 - A-: [85, 90) A: [90, 100]
- NOTE: There is no rounding, 64.99 = "D", etc.

V. LABS (20%)

- All students are required to attend LABS.
- Students who are not assigned a lab grade due to non-attendance will automatically receive a failing grade ("F") for the course.
- PLEASE NOTE:
 - Labs will be meeting on Monday, August 21st
 - The lab syllabus can be found at. Use the link below from the Department's web site, then scroll down to your particular lab section.
<https://www.physast.uga.edu/courses>

VI. HOMEWORK (15%)

- There will be a number of HOMEWORK assignments posted online (on the Mastering Physics website).
- All assignments count towards your grade.
- All assignments must be submitted on time.
- No makeup, no late submission.
- **Rules:**
 - You may work in groups.
 - You submit your work individually.

VII. READING ASSIGNMENTS / QUIZZES (3%)

- Starting from class 2, there will be a reading assignment given each day.
- Starting from week 2, there will be a reading quiz given each day.

VIII. PARTICIPATION & ATTENDANCE (2%)

- **Class attendance is mandatory and will be monitored regularly. You are responsible** for obtaining any announcements/materials/information that were given out in a class that you missed.
- You will be allowed a total four (4) missed classes.
- Those students who miss no more than four (4) classes during the semester will receive the following benefits:
 - A 2% participation grade
 - Your lowest homework grade will be dropped.
 - Should you earn a grade of B or better in the class, I will be happy to write you a letter(s) of recommendation.
- Students who miss more four (4) and less than ten (10) classes will have earned a 1% participation grade.
- Students who miss more than ten (10) classes will have earned a 0% participation grade.

NOTE: **YOU** are responsible for keeping track of your absences.

IX. EXAMS (60% TOTAL)

- There will be a total of five (5) EXAMS on selected chapters.
- Worst of the five exam grades will be dropped (such as, *e.g.*, a "0" due to non-attendance), so, technically, each exam is worth 15%.
- **No makeups or re-scheduling is permitted.**
- **Rules for the EXAMS:**
 - ONE (1) STANDARD SHEET of paper containing anything you want (*e.g.*, physical constants, formulae, diagrams, problem solutions, *etc.*) ALL HANDWRITTEN. You may write on both sides
 - A simple (non-graphing, non-symbolic, non-programmable) scientific calculator.
 - No other electronic device(s) permitted.
 - Must work individually.

X. INCOMPLETES

- You may be assigned an "I" (incomplete) for the course in accordance with the UGA Regulations, provided all of the following applies:
 - You received a non-failing grade in LABS (> 70)
 - You received a non-failing grade (> 55%) on at least one EXAM,
 - No violation of the Academic Honesty Policy took place during the course of the semester.

XI. WITHDRAWALS

- The Undergraduate Bulletin and the Registrar's Office website describe the University policies regarding withdrawals and incompletes. The deadline for withdrawal is **Thursday, October 19th**.

XII. PEER LEARNING ASSISTANTS

- This course uses Peer Learning Assistants (PLAS).
 - PLAs attend class meetings and work with groups of students in problem-solving activities.
 - PLAs will also be available to answer questions outside of class periods and may organize problem solving or review sessions.
 - Please remember: the goal is to *learn* from your Peer Learning Assistants, not for them to do your homework for you.

XIII. TUTORS

- Tutors are available through the following:
 - Department of Physics and Astronomy: <https://www.physast.uga.edu/tutors/>
 - UGA Tutoring Program: <http://tutor.uga.edu/arc/tutoring/> Please remember: the goal is to *learn* from your tutor, not for them to do your homework for you.

XIV. HOW TO DO WELL IN THIS CLASS

- Read each chapter before it is discussed in class.
- Attend every lecture.
- Participate actively in discussions.
- Re-read chapter carefully after class.
- Do assigned homework.
- Solve as many end-of-chapter problems as possible.
- Concepts first. Do NOT plug-and-chug.
- Use a buddy system: find a friend with whom to discuss physics.
- Think about physics on a regular basis.
- If everything fails, consider dropping the class before the deadline and retaking it at a later time.

TABLE I: Fall 2017 Master Schedule

ATTENTION: This schedule is preliminary and is subject to modification. Especially Reading Assignments, which will be assigned at the end of each class.

Week	Date	Reading	Topics	Day
1	Aug 15	–	Intro to this course; Principles of GO	T
	Aug 17	26.1-2	GO: Reflection; Plane mirrors; Spherical mirrors	H
2	Aug 22	26.3-4	GO: Refraction; Total internal reflection; Ray tracing	T
	Aug 24	26.5-7	for lenses; thin lens equation	H
3	Aug 29	27.1-2	OI: Human eye, camera; Corrective optics	T
	Aug 31	27.3-5	OI: Magnifying glass; Microscope; Telescope	H
4	Sep 5	28.1-2	WO: Superposition & interference, Two-slit experiment	T
	Sep 7 (E1)		EXAM 1	H
5	Sep 12	28.4,6; 19.1	WO: Single-slit diffraction; Diffraction gratings	T
	Sep 14	19.2,3	WO: Spectrometers; EF: Electric charge EF: Insulators & conductors; Coulomb's Law	H
6	Sep 19	19.4-5	EF: Electric field; field lines; capacitor	T
	Sep 21	19.6-7	EF: Shield. & charge. by induction, Electric flux & Gauss' Law	H
7	Sep 26	20.1-2	REVISITING: Energy, WET & LCE; EP: Electric potential & energy; Energy conservation	T
	Sep 28 (E2)		EXAM 2	H
8	Oct 3	20.3-4	EP: Electric potential of pt. charges; Equipot. surfaces & E-field	T
	Oct 5	20.5-6	EP: Capacitors & dielectrics; Electric energy storage	H
9	Oct 10	–	CH. 20-21: Problem Solving	T
	Oct 12	21.1-4	DC: Electric current; Ohm's Law; Energy & power in EC	H
10	Oct 17	21.5	DC: Resistors in series & parallel; Kirchhoff's Rule	T
	Oct 19 (E3)	–	EXAM 3	H
11	Oct 24	22.1-2	MF: Magnetic field; Magnetic force on moving charges	T
	Oct 26	22.3-4	MF: Motion of charged particles in magnetic field; Magnetic force on c-carrying wire	H
12	Oct 31	22.5	MF: Magnetic force on c-carrying loops & magn. torque	T
	Nov 2	22.6-8	MF: Ampere's Law; loops & solenoids; Magnetism in matter	H
13	Nov 7	23.1-4	EMI: Induced EMF; Magnetic flux; Faraday's Law; Lenz's Rule	T
	Nov 9 (E4)	23.5-6	EXAM 4	H
14	Nov 14	23.5-10	EMI: Work & E. Energy; Generators; Inductance; RL circuits; Energy in a B-field; transformers	T
	Nov 16	24-1;25.1-2	AC1: RMS values; EMW: EM waves; spectrum	H
15			THANKSGIVING BREAK	
16	Nov 28	24-1;25.1-2	EMW: Doppler effect; EMW: Energy & momentum	T
	Nov 30	25.3-5	EMW: Polarization; Review	H
18	Dec 12 (E5)	–	EXAM 5 (8:00 A.M. - 9:15 A.M.)	T