

Physics 121-104
Course Outline (Spring 2012)
FMH 310

Th. 6:00 PM - 9:05 PM

Dr. Slawomir Piatek

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Special Notes:

Course Prerequisites: Phys 105 &106, Phys 111 or Phys 111H and Math 111 (Calculus I)

Textbook: Physics for Scientists and Engineers, NJIT PHYS 121, Eighth Edition, by Serway and Jewett.

Laboratory: The laboratory course, Phys 121A, must be taken concurrently with Phys 121. Withdrawal from either course will cause a simultaneous withdrawal from both courses.

Exams: There will be two exams: mid-term and a final on the days indicated below. Each exam has 20 multiple-choice questions with five choices for an answer. To each exam you will be allowed to bring our textbook and a calculator.

Homework: I will assign homework on a regular basis starting January 25 (Wednesday at 00:01 AM) using the web-based WebAssign system (<http://www.webassign.net/>) To use the system, you must purchase the access from either the NJIT bookstore (comes with the textbook), directly from the WebAssign web page, or from Amazon.com. **Homework deadline is the following week Tuesday at 5:00 AM.** No late submission will be accepted. No paper. No partial credit.

The results and answers to the questions will be available on the WebAssign.

Your login name and password are your NJIT's eight-digit UCID. Please change the password and remember the new one. For institution type in: "njit" (lower case "n" and without the quotes). For example, the login name for Slawomir Piatek (UCID 23006789) would be 23006789 and the password 23006789.

Honor Code Violations/Disruptive Behavior: NJIT has a zero-tolerance policy regarding cheating of any kind and student behavior that is disruptive to a learning environment. Any incidents will be immediately reported to the Dean of Student Services. In the cases the Honor Code violations are detected, the punishments range from a minimum of failure in the course plus disciplinary probation up to expulsion from NJIT with notations on student's permanent record. Avoid situations where honorable behavior could be misinterpreted. No eating or drinking is allowed at the lectures, recitations and laboratories. Cellular phones must be **powered off** during the class hours (No standby mode!).

Grading Policy:

I will determine your course grade based on the two exams and homework using the following weights:

Mid-term: 30%
Final: 30%
Homework: 40%

Your letter grade will be determined based on the following schedule:

85% -100% A
80% - 85% B+
70% - 80% B
65% - 70% C+
50% - 65% C
40% - 50% D
0% - 40% F

Class Calendar:

- Lecture 1** (Th. 1/19) Charge, Electric Forces
Read: Chapt. 23 Sect. 1-3
Suggested problems: Ch. 23: 2, 6, 9, 10, 13
- Lecture 2** (Th. 1/26) Electric Field
Read: Ch. 23 Sect. 4-7
Suggested problems: Ch. 23: 20, 21, 25, 29, 31, 43, 49, 59
- Lecture 3** (Th. 2/3) Gauss' Law
Read: Ch. 24 Sect. 1 - 4
Suggested problems: Ch. 24: 1, 5, 12, 25, 29, 31, 40, 41, 51, 55
- Lecture 4** (Th. 2/9) Electric Potential

Read: Ch. 25 Sect. 1-6
Suggested problems: Ch. 25: 1, 5, 12, 18, 22, 23, 45

- Lecture 5** (Th. 2/16) Capacitance
Read: Ch. 26 Sect. 1 - 5
Suggested problems: Ch. 26: 5, 6, 7, 8, 16, 18, 23, 24, 31, 43
- Lecture 6** (Th. 2/23) Current & Resistance
Read: Ch. 27 Sect 1-4, 6
Suggested problems: Ch. 27: 1, 3, 8, 14, 19, 22, 37, 41, 51
- Lecture 7** (Th. 3/1) Circuits
Read: Ch. 28 Sec. 1-3
Suggested problems: Ch. 28: 9, 17, 19, 23, 29, 30, 54, 66
- Lecture 8** (Th. 3/8) RC Circuits; Midterm (20 MC Qs; Chs 23 – 28.1 -3; Open book; Starts at 7:30 PM; Bring a pencil, eraser, calculator, and a photo ID)
Read: Ch. 28 Sec. 4
Suggested problems: Ch. 28: 36, 37, 39, 40, 42, 59, 67, 71
- Lecture 9** (Th. 3/22) Magnetic Fields
Read: Ch. 29 Sec. 1-5
Suggested problems: Ch. 2, 3, 9, 12, 19, 24, 33, 46, 73
- Lecture 10** (Th. 3/29) Sources of the Magnetic Field
Read: Ch. 30 Sec. 1 -4
Suggested problems: Ch. 30: 3, 5, 7, 12, 13, 18, 19, 39, 55
- Lecture 11** (Th. 4/5) Faraday's Law
Read: Ch. 31 Sec.1-5
Suggested problems: Ch. 31: 4, 6, 9, 12, 14, 23, 28, 36, 51
- Lecture 12** (Th. 4/12) Inductance
Read: Ch. 32 Sec.1-5
Suggested problems: Ch. 32: 2, 4, 5, 9, 17, 25, 27, 29, 43, 49, 60
- Lecture 13** (Th. 4/19) AC Circuits
Read: Ch. 33 Sec. 1 - 5
Suggested problems: Ch. 33: 7, 11, 17, 24, 25, 28, 39
- Lecture 14** (Th. 4/26) AC Circuits (cont.)
Read: Ch. 33 Sec. 6- 8
Suggested problems: Ch. 33: 34, 43, 44, 51, 59, 67