General Physics II
(4 Credit Hours)
Physics 211 (Spring 2017)

Syllabus available on Blackboard
http://webcourses.niu.edu

Under Course Information
DO NOT USE my Argonne National Lab Email Address (anl.gov). I will not reply to these emails.

Name: Prof. Omar Chmaissem (sha-my-sim) preferred method

Email: Chmaissem@niu.edu

Fax: (815) 753-8565

(You can call me Omar)
For other meeting times as needed, please see me the morning until about 1:45 PM. On most meeting days, I will be available most of the day. Office hours (FW 210): 3:30 PM to 4:45 PM.

We will meet twice a week in LaTourette FW 200; Tuesdays and Thursdays from 2:30 PM to 3:30 PM.
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<th>Day</th>
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<th>TA</th>
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TA's email:
- z1779353@students.niu.edu
- z1779355@students.niu.edu
- z1803363@students.niu.edu
- z1805265@students.niu.edu

Separate lab rules and instructions will be covered by your TAs. We have 6 lab sections. Labs are 2 hrs 50 min long.
A's and B's: for all of the classes nearly always receive. Conversely, people who've come to most of classes have received very bad grades. In the past, people who have skipped a lot.

Point titles; and which will be on the tests. a lot that I'll say that won't be in the Power. You should come to class because there's

The Importance of Attending Class
Grade determined by:

- **Tests:** 40%. Two or three cumulative tests. Dates will be announced in class and/or Blackboard. **No make up tests for any reason.** Tests cannot be taken at times other than the class test time (DRC exceptions).

- **Lab:** 25% (a minimum average lab grade of 60% is required. You will **fail** the course if your lab score falls below this mark.) Likewise, you will **fail** the course if you don’t satisfy all coursework requirements as described here and throughout the syllabus.

  Make sure you check your report(s) in a timely manner (Lab schedule and lab rules will be separately posted on Blackboard).

- **Final exam:** 25%

  A final exam score of less than 50% will result in failing the class if your Test average is less than 60% regardless of your overall grade.

  **[Tues. May 9, 4-5:50 p.m.]**

- **Homework:** 10%. **See notes for rules.**
Judgment.

May be referred to the University Judicial Office for Final
Know how to distinguish real from fake. Contested evidence
real. I have seen many fake doctor's or nurse's notes and I
is that evidence that the emergency is

Note 4: I have to see a convincing evidence that the emergency is

lowest score. No exceptions.
then your "waived emergency score" will be considered your
Note that I offer the whole class to drop the lowest test grade
be waived; however, do not assume that this is automatic.
emergencies (see note 4 below), the missed test grade may

However, in the case of convincing and well-documented
cannot be taken at a different time for whatever reason.
There will absolutely be no make-up tests. Likewise tests

Note 3:

Strategic examples and problems found within each chapter
It's your responsibility to solve and understand all solved

Note 2:

Note 1: HW deadlines are RIGID. No late HW will be allowed or

 accepted.


Offenders will be referred to the University's Judicial Office.

The Internet:
- Students (including students from previous semesters or from others (including students from previous semesters) or from partially or entirely) have been copied from the manual.
- We will be using SafeAssignments which determine if any reports have been copied.

Zero Tolerance Policy:

Cheating and plagiarism are serious offenses.

Yourself and placing me in a bad situation.

Please avoid embarrassing devices are stored away. Please make sure that such seen with you during the test. Please make sure that such is
You will fail the test if any device other than a calculator is

Final exam may be rescheduled within 48 hours only in case described in note 4.

Final exam may be rescheduled within 48 hours only in case described in note 4.
Your final letter grade for the semester will be determined based on the following scale:

GRADE SCALE:

A  93 - 100%
A- 90 - 92.9%
B+ 87 - 89.9%
B  83 - 86.9%
B- 80 - 82.9%
C+ 74 - 79.9%
C  70 - 73.9%
D  60 - 69.9%
F  0 - 59.9%
• Subatomic Particles
• Nuclei
• Atoms
• Photon
• Relativity
• Interference
• Optics
• Light Waves
• Electromagnetic Waves
• Alternating Current
• Induction
• Magnetism
• Circuits
• Electric Energy
• Electric Charge

The fifteen units are:

The course consists of fifteen units. Each unit has lectures and demonstrations, a reading quiz, a lab, and exercises covering the material in that unit. At the end of the course, there is a final exam covering all the units.
Prepare the student for the MCAT exam

- Principles.
- Develop and use mathematical formulations of physical principles.
- Solving.
- Develop critical thinking and a scientific approach to problem-solving.
- Physics.
- Develop an understanding of the basic concepts and principles in

General objectives are to:

Course Objectives
Describe the behavior of a circuit with resistors and capacitors.

- Power.
- Define the relationships between current, voltage, and electrical currents in a circuit.
- Use Ohm's Law and Kirchhoff's rules to find unknown voltages or identify batteries, resistors, and capacitors in a circuit diagram.
- Equivalent circuit.
- Describe the differences between an open circuit, closed circuit, and circuit.
- Find the stored charge and energy on one or more capacitors in a field.
- Define electric field, field lines, and equipotential lines.
- Use Coulomb's Law to find the force on a charge.
- Describe the actions of like and unlike charges near each other.

Electricity (electric charge, electric energy, circuits)

Specific Objectives - I
Describe polarization and its effect on intensity.

• Find the energy stored in an electromagnetic field.

• Identify the regions of the electromagnetic spectrum.

• Define reactance, impedance and resonance in an AC circuit.

• Identify inductors and ac power sources in a circuit diagram.

• Use Faraday's law and Lenz's law to find the induced emf and current.

• Use the principles behind motors, generators, and transformers.

• Use Ampere's law to find the magnitude of a magnetic field.

• Describe the electric field and electric force on a charged particle moving in a magnetic field and current.

• Describe the magnetic field around a magnetic dipole and a wire with electromagnetic waves.

Magnetism (magnetism, induction, alternating current, rotating electric and magnetic fields)
Apply special relativity to find energy and momentum.

Use the Lorentz factor to find the change in measured time and distance.

Describe the difference between interference and diffraction.

Find points of constructive and destructive interference.

Define refractive power in dipters and magnification.

Describe the principles behind compound optical instruments.

Find the size and location of an image formed by a mirror or lens due to refraction and reflection.

Use Snell's law and the laws of refraction to find the angle of a light ray.

Identify the speed of light and its relation to the index of refraction.

Define the relationship between light waves and rays.
Quantum Physics (photons, atoms, nuclei, subatomic particles)

Specific Objectives - IV

- Identify the fundamental particles of the Standard Model.
- Describe nuclear fission and fusion.
- Use half-life to find the activity due to radioactive decay.
- Reactions.
- Identify common particles involved in radioactivity and nuclear.
- Protons and neutrons in the nucleus.
- Define the relationship between mass number, atomic number, and nucleon.
- Find the quantum numbers for electron shells in an atom.
- Application.
- Describe matter waves and the uncertainty principle and their
  absorbed photons.
- Use the Bohr model of the atom to find the energy of emitted and
  absorbed photons.
- Define the electron volt and Planck's constant.
- Describe the photoelectric effect and the photon.
If dropping the course, please make sure you do so before the official deadline; otherwise, a WF or WP may be recorded on your transcripts (depending on your standing).

Before withdrawing:

- Please consult with me. Withdrawing grades may complicate the full semester. Withdrawing grades may be calculated differently.

Syllabus and grading scheme is designed for students warranted.

You will be informed in class if any modifications are required, or required. The grading scale whenever needed. The grading scale is a tentative syllabus which is subject to change.

More Important Notices
I look forward to talking with you to learn how I may be helpful in enhancing your academic success in this course. 

(8) or circ@niu.edu

Health Services Building, and can be reached at 815-753-1303. The DRC is located on the 4th floor of the Health Services Building. The DRC encourages you to contact the DRC if you have not already done so. Students who need academic accommodations based on the impact of a disability will be encouraged to contact the DRC if they have not already done so. Students who have a disability should let his or her faculty member know as soon as possible. Students who need academic accommodations due to a disability should let his or her faculty member know as soon as possible.

The Disability Resource Center (DRC) is committed to providing an accessible educational environment in collaboration with Disability Resource Center. Any student requiring an

Accessibility
Academic Integrity: As detailed in the current NIU Undergraduate Catalog: Good
consistent with the policies set forth in the course syllabus.

on the instruction, who remains solely responsible for assigning a course grade, recommendations by the hearing board regarding the course grade are non-binding.

recommending a finding of responsibility or an admission of responsibility by the student, any

finding of responsibility or not responsible for his or her action, the ruling of the Judicial Hearing Board shall be binding. In cases where there is

action, with regards to finding the student either responsible or not responsible for his or her

greater than an F in a course can be levied only through the University Judicial System.

making use of the Academic Misconduct Incident Report. Additional sanctions

shall refer to the Office of Community Standards and Student Conduct

appropriate (such as repeated offenses or flagrant violations), the faculty member

student or if the faculty member feels a sanction greater than an F in the course is

Judicial File in all matters where the charge of academic misconduct is disputed by the

Report indicates. Final disposition of the case, which will be placed in the student’s

Student Conduct shall receive a copy of the Academic Misconduct Incident

writing whenever such action is taken, and the Office of Community Standards and

 faculty member shall notify the student in

greater than an F for that course. The faculty member may elect to resolve the matter at that level by levying a sanction no

department chair. If the facts of the incident are not disputed by the student, the

the opportunity to resolve the matter in meetings with the faculty member and the

that occur in a course which the faculty member is teaching. The student shall be given

A faculty member has original jurisdiction over any instances of academic misconduct.