

P150 SYLLABUS Fall/2013 (3 credit hours)
Section 2 Tu/Th

COURSE: **Physics (Introductory)**
ALL course information is posted on BlackBoard

TEXT/Materials: (1) Lecture notes and powerpoint slides are posted on blackboard

Course Objectives:

General objectives are to:

- Develop an understanding of basic scientific concepts and principles in Physics.
- Develop critical thinking and a scientific approach to problem solving.

Specific Objectives:

Physics principals to be covered include concepts of force, motion, Newton's Laws, conservation of energy, momentum, pressure.

CLASS MEETINGS: Lecture Section 1: T/Th 3.30-4.45 pm, Tourette 200

Instructor: Michel van Veenendaal, Tourette 223; 815-753-0667
Office Hours: **Tuesday/Thursday 1.30-3.30PM**, or by appointment.
Email: veenendaal@niu.edu
Web page: See blackboard

Note: Honors students will be required to do a special project – see me to discuss.

SCHEDULE OF TESTS:

TEST 1	Tuesday 9/24
TEST 2	Thursday 10/17
TEST 3	Tuesday 11/19

FINAL **Tuesday, 12/10, 4-5.50pm** (be aware of potential exam conflicts)

Homework is not graded.

<u>GRADING:</u>	Tests	60%
	Final Exam	40%

The final grades are curved. Therefore, the final grade depends on the distribution of the grades. Typical relationships between the weighted tests/final and the grades are

A	> 80±5
B	65±5 - 80±5
C	45±5 - 65±5
D	TBD

Note that these ranges are indicative and that the instructor remains the right to change the values depending on the performance of the students and the difficulties of the exams.

MINIMUM REQUIREMENTS TO PASS THE COURSE: YOU MUST HAVE COMPLETED ALL THE FOLLOWING:

1. Take 2 of the exams and the Final exam
2. Pass the Lab (150A students only).

IF YOU ARE TAKING THE LAB (150A): The above applies to the 2 ½ hour/week lecture portion of the class, which will count for 75% of your total grade. The other 25% will be the lab.

NOTE: YOU MUST PASS BOTH THE LECTURE COURSE & LAB IN ORDER TO PASS THE ENTIRE COURSE.

TESTs:

There will be 3 tests. The lowest test score will be dropped. If an exam is missed that will be the lowest score which is not counted. There will be **no** makeup tests unless you obtain written (email is fine) approval from me **PRIOR** to the exam. You will need to provide documentation for your absence. For example, if you are ill I will ask you to bring in a note from Health Services or your Doctor.

The **Final** Exam is comprehensive.

YOU MAY BE ASKED TO SHOW YOUR NIU PHOTO ID WHEN YOU TAKE EACH TEST. IF YOU DO NOT HAVE YOUR ID WITH YOU YOUR TEST WILL NOT BE GRADED

HOMEWORK: Homework will not be graded, but it is strongly advised that students attempt to make the homework independently.

COURSE POLICIES INCLUDE:

1. Be respectful of each other (this applies to Instructors, TA's and students). Some specifics include:
 - a. No cell phone/ electronic device usage in class (except calculators). Cell/ smart phones must be turned off or silenced and placed in backpacks, etc. (not in pockets or on desks). Violators may be required to turn in their devices to the Instructor for the remainder of the class period.
 - b. If you need to leave class early, let your Instructor/ TA know
2. Laptops/ notebooks may be used for lecture materials and taking notes only.
3. Be aware of the policies and procedures regarding your rights as well as responsibilities that are published in the NIU Student Code of Conduct. It is available on line at [http://www.stuaff.niu.edu/judicial/24430jo\(body\).pdf](http://www.stuaff.niu.edu/judicial/24430jo(body).pdf) .
4. The instructor and the university reserve the right to modify, amend, or change the course syllabus (course requirements, grading policy, etc.) as the curriculum and/or program require.
5. Americans with Disabilities Statement (available at: http://niu.edu/disability/accessibility_statement/index.shtml)
6. For academic integrity, see <http://www.niu.edu/isye/graduate/integrity.shtml>

Course Schedule

- 1 Classical Mechanics
 - 1.1 Newton's first law
 - 1.1.1 Aristotle's natural philosophy
 - 1.1.2 Constant velocity
 - 1.2 Newton's second law
 - 1.2.1 Constant acceleration
 - 1.2.2 Newton's second law: $F = ma$
 - 1.3 Gravity
 - 1.3.1 General formulas
 - 1.3.2 Weight and mass
 - 1.3.3 Gravity and acceleration
 - 1.3.4 Gravity: the mysterious force
 - 1.4 The solar system 38
 - 1.4.1 Science between the Greeks and the Renaissance
 - 1.4.2 Geocentric model
 - 1.4.3 Galileo
 - 1.4.4 Tycho Brahe and Johannes Kepler
 - 1.5 The Age of Calculus
 - 1.6 Newton's third law
 - 1.6.1 Newton's law of Gravitation
 - 1.6.2 Density of the earth
 - 1.6.3 Action equal minus reaction
 - 1.6.4 Planets/objects in orbit
 - 1.7 Law of conservation of momentum
 - 1.7.1 Inelastic Collisions
 - 1.7.2 Elastic Collisions-Part 1
 - 1.8 Conservation of Energy
 - 1.8.1 Conservation of Energy and Friction
 - 1.8.2 Elastic Collisions-Part 2
 - 1.9 Pressure 96