

Physics 101 - Section 03

Introduction to Mechanics Spring Semester 2016

- Room/Time:* Seaver Hall 101 – TR 11:20 am - 12:50 pm (lectures)
Seaver Hall 114/117 – M 2:20 - 3:50 pm (lab sections)
- Instructor:* Dr. Gabriele Varieschi
Office: Seaver Hall - 110
Phone: (310) 338-7632
E-mail: gvarieschi@lmu.edu
Office hours: MW 10:00am-11:30 am; and by appointment.
Web page: <http://myweb.lmu.edu/gvarieschi/physics.html>
- Textbook:* Serway & Jewett – Physics for Scientists and Engineers, Vol 1 (or two volumes together) Brooks/Cole/Cengage, **9th edition (recommended)**, or any other recent edition. Homework assignments will be based on the 9th edition.
- Objectives and Topics:* From Chapter 1 to Chapter 13 (tentatively). Physics, measurement and units. Motion in one dimension: velocity and acceleration. Vectors and components. Projectile motion and circular motion. Newton's laws and applications. Free body diagrams. Kinetic and potential energy: conservation of energy. Linear momentum and collisions. Rotational motion and angular variables. Static equilibrium. Newton's law of universal gravitation. Laboratory experiments pertaining to mechanics. Calculus based course for engineers and scientists.
Prerequisite or concurrent enrollment: Math 131 – Calculus I.
- Learning Outcomes:* Understand the phenomenology of mechanics. Understand the concepts of kinematics: position, velocity, acceleration and the related use of vectors. Conceptually understand the idea of force and the three fundamental laws of mechanics. Be able to solve problems of increasing complexity involving different forces and master the technique of free body diagrams. Understand the theoretical framework of conservation principles (such as conservation of energy and linear momentum). Understand more advanced applications of rotational dynamics and statics. This course serves as a prerequisite for PHYS 201.
- Tests:* There will be **three tests** during the semester. **They will all count toward your final grade, so please try not to miss any of them.** There will be **no make-up tests** given. Tests are closed-book, but you may bring in a sheet of equations.
- Test Dates:* TBA
- Final Exam:* **Tuesday, May 3, 11am-1pm.**
The final exam is cumulative and is equivalent to 2 tests.
- Homework:* Weekly homework will be assigned and graded (in part – one or two problems per assignment). Solutions will be discussed in class and posted online. Homework assignments are due at the beginning of class, on the due date. Late homework will receive partial credit.

Laboratory: The laboratory is an integral part of this course. The experiments will complement the topics of the lectures. The laboratory will count for 15% of your final grade. Missing 2 or more lab sessions will result in a failing grade for the course. See lab schedule for detailed information.

DOWNLOAD LAB MATERIALS AT:

<http://myweb.lmu.edu/gvarieschi/physics.html>

<i>Grading:</i>	Laboratory	15 %
	Homework	10 %
	Test 1	15 %
	Test 2	15 %
	Test 3	15 %
	Final Exam	30 %

Test Grading (approx.): <50%=F; 50-54%=D; 55-69%=C range; 70-84=B range; >84=A range.

Academic Honesty: Academic dishonesty will be treated as an extremely serious matter, with serious consequences that can range from receiving no credit for assignments/tests to expulsion. It is never permissible to turn in any work that has been copied from another student or copied from a source without properly acknowledging the source. It is your responsibility to make sure that your work meets the standard of academic honesty set forth in the "LMU Honor Code and Process" in the Undergraduate Bulletin.

Syllabus changes: If necessary, this syllabus and its contents are subject to revision; students are responsible for any changes or modifications announced in class.

Have a good semester. Good luck!