

**Instructor:** Sergei A. Voloshin, 349 Physics Bldg., ph:313-577-1630; fax:313-577-0711; e-mail: voloshin@wayne.edu

**Office hours:** 1:00pm - 2:00pm, MW, and by appointment.

**Texts:** J.R. Taylor, "Classical Mechanics", 2005.

L.D. Landau and E.M. Lifshitz, "Mechanics"

**Grading:** 20% for each of two one-hour exams, 30% for the final, 30% for the homework/in-class quizzes.

**Homework:** assigned weekly and collected on a week later. Late homework will not be accepted.

### PHY5200 outline

1. Newton's laws of motion
2. Projectiles, charged particles in EM fields, oscillations
3. Momentum, angular momentum, energy
4. Lagrange's equations
5. Motion in a central field
6. Collision theory

### PHY5210 outline

1. Mechanics in noninertial frames
2. Rotational motion of rigid bodies
3. Coupled oscillators and normal modes
4. Hamiltonian mechanics
5. Special relativity
6. Continuum mechanics

### Learning outcomes

- Understanding of the principles and concepts of Classical Mechanics.
- Ability to solve problems and apply corresponding techniques for the material outlined above
- Ability to critically read and understand scientific texts related to Classical Mechanics.

### Homework:

- Write clearly.
- Explain notations, especially if different from those used in lectures.
- Do *not* refer to the equations in the textbook (you may refer to lectures or to the equation sheet).
- Do not write anything irrelevant.
- If a computer program has been used, attach a print-out.

**Students with disabilities.** If you have a documented disability that requires accommodations, you will need to register with Student Disability Services for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. SDS telephone number is 313-577-1851 or 313-577-3365 (TDD only). Once you have your accommodations in place, I will be glad to meet with you privately during my office hours to discuss your special needs. Student Disability Services mission is to assist the university in creating an accessible community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University.