PHY420 Mechanics
Fall 2018

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Time and Location: MWF 04:10-05:00 LL 514

Course website http://athena.physics.lehigh.edu/

Course Contents


Initial Competences

• Undergraduate course on classical mechanics, good knowledge of multivariable calculus.

Final Competences

• Ability to apply the methods of Lagrange, Hamilton, and Hamilton-Jacobi (including action-angle variables) to solve problems in mechanical systems consisting of particles.
• Ability to apply canonical transformations and Poisson bracket formulation.
- Understand of the origin of conservation laws in mechanics and the relationship between symmetry and conservation.
- Ability to perform a linear expansion of mechanical systems into normal modes.
- Qualitative understanding of requirements for integrability and onset/characteristics of chaotic behavior.

**Textbooks**


**Grading**

Upon satisfactory attendance, the course grade will be based on:

1. **Weekly homework problems (25%)**. Assignments are due before Friday’s class. Solutions to homework problems will be discussed on Friday. No late homework submissions will be accepted.
2. **Two one-hour exams (25%)**.
3. **Final exam (50%)**.

**Office Hours**

MW 5:00-6:00

Accommodations for Students with Disabilities: If you have a disability for which you are or may be requesting accommodations, please contact both your instructor and the Office of Academic Support Services, University Center C212 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted.

The Principles of Our Equitable Community:
Lehigh University endorses The Principles of Our Equitable Community (http://www.lehigh.edu/ inprv/initiatives/PrinciplesEquity_Sheet_v2_032212.pdf). We expect each member of this class to acknowledge and practice these Principles. Respect for each other and for differing viewpoints is a vital component of the learning environment inside and outside the classroom.