

PHYS 201 – Mechanics

Semester: Fall 2009
Lecture Hours: Tu, Th B1 – 9:30 – 10:45
Room: Eng. B15

Instructor: Alper Kiraz	TA: M. Yavuz Yüce
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Off. Hr: Tu, B4 14:00 – 15:15 or by appointment	Prob. Sess.: Fr, B4 14:00-15:15 in SCI 129

Course Description: Review of vectors and matrices, orthogonal transformations; numerical simulations and animations of mechanical systems, kinematics and dynamics of particles; Newton's laws of motion; conservation laws; oscillations; central forces; orbits and scattering in a central force field; planetary motion; non-inertial reference frames; potential theory; the two-body problem.

Textbook: *Classical Mechanics* by Tom W. B. Kibble and Frank H. Berkshire, Fifth Edition, 2004 Imperial College Press, ISBN: 9-781860-944352

Additional recommended textbook: *Classical Dynamics of Particles and Systems* by S. T. Thornton and J. B. Marion, Fifth Edition, 2004 Brooks/Cole, ISBN: 0-534-40896-6

Grading: 1st Midterm 20 %, (16 Nov. 2009)
 2nd Midterm 20 %, (21 Dec. 2009)
 Homework 10 %
 12 Quizzes 18% (1.5% per quiz)
 Final 25% (to be announced)

Attendance Policy: If a student attends 90%-100% of the classes s/he obtains 7%, if a student attends 70%-90% of the classes s/he obtains 5%, if a student attends 50%-70% of the classes s/he obtains 3%.

Homework Policy: You may discuss the problems, consult your teachers and use the library and internet. However, the final submitted work should be totally yours. You must not submit work done in groups, transfer files or copy from a book.

Lecture Schedule:

Week	Subject	Week	Subject
1	Sep. 26 Matrices, Vectors and Vector Calculus (App. A)	9	Nov. 23 Central Conservative Forces (Ch. 4)
2	Oct. 5 Matrices, Vectors and Vector Calculus (App. A) / Introduction (Ch. 1)	10	Nov. 30 Central Conservative Forces (Ch. 4)
3	Oct. 12 Linear Motion (Ch. 2)	11	Dec. 7 Rotating Frames (Ch. 5)
4	Oct. 19 Linear Motion (Ch. 2)	12	Dec. 14 Rotating Frames (Ch. 5)
5	Oct. 26 Linear Motion (Ch. 2)	13	Dec. 21 MT 2 (Ch. 4, 5) / Potential Theory (Ch. 6)
6	Nov. 2 Energy and Angular Momentum (Ch. 3)	14	Dec. 28 Potential Theory (Ch. 6)
7	Nov. 9 Energy and Angular Momentum (Ch. 3)	15	Jan. 4 The Two-Body Problem (Ch. 7)
8	Nov. 16 MT 1 (App. A, Ch.s 1,2,3) / Central Conservative Forces (Ch. 4)		Final Exam (App. A, Ch.s 1-7)