



**Laboratory Work:** Labs are performed every week except during midterm week. There is no lab midterm exam but there may be a lab final exam.

A student must pass the lab component of the course in order to pass the course.

Lab work will be performed in-group of two wherever possible. Group reports are due at the end of the lab period and must be written in black lab book.

A student who misses a lab for valid reasons must makeup the lab at a different time.

**Assignments:** There will be a problem set every week. Assignment problems are taken from the textbook. Detailed course outline will show the due dates.

**Class Tests:** There will be few class tests during the term. Detailed course outline will show the dates. These will be short problem solving tests during regular class time.

**Midterm Exam:** The Midterm exam is given during the lab hours in the midterm exam week.

**Final Exam:** The final exam is usually 3 hours long. Date and time will be announced by the registrar's office.

## PC-1080

### Detailed Course Schedule

The following approximate schedule of lecture topics is presented as an aid to your study outline.

- Week of Sep. 2** Math Review; Linear functions of one and two variables; Quadratic equations; Graphs of linear and quadratic equations.
- Week of Sep. 7** Pythagorean theorem; Trigonometric functions; Systems of linear equations; Exponents and logarithms; Units and unit conversions; Dimensional analysis; Scalar and Vector quantities; Vector addition and subtraction; Resolution of Vectors; Multiplication of Vectors and Scalars. (Ch. 1)
- Week of Sep. 14** Position and Displacement; Average and instantaneous speed, velocity and acceleration; Kinematics with constant acceleration; graphical analysis; freely falling bodies. (Ch. 2)
- Week of Sep. 21** Displacement, Velocity and Acceleration; Kinematics equation in two dimensions; Projectile motion; Relative motion. (Ch. 3)
- Week of Sep. 28** Force and Mass; Newton's Laws of Motion; Free-body diagram; Normal forces, tension, Gravitational force, weight and apparent weight. (Ch. 4)
- Week of Oct. 5** Kinetic and Static friction; Application of Newton's Laws of Motion; Uniform Circular motion; centripetal acceleration and force. (Ch. 4 & 5)
- Week of Oct. 12** Satellites in circular orbits; Apparent weightless and artificial gravity. (Ch. 5)  
Review of the chapters covered so far.  
**MID-TERM EXAMS THIS WEEK**
- Week of Oct. 19** Banked curves; Work; Kinetic energy, Work-energy theorem; Gravitational Potential energy; Conservative and non-conservative forces; Conservation of Mechanical energy. (Ch. 6)
- Week of Oct. 26** Power; Impulse and momentum; Conservation of linear momentum; Collision in one and two dimensions. (Ch. 6 & 7)
- Week of Nov. 2** Collision in two dimensions; Rocket propulsion; Angular displacement, velocity and acceleration; Rotational kinematics; Tangential variables; Rolling motion. (Ch. 7 & 8)
- Week of Nov. 9** Torque; Equilibrium of rigid bodies; Free-body diagram; Center of Gravity. (Ch. 9)
- Week of Nov. 16** Newton's second Law for rotation about a fixed axis; rotational work and energy; Angular momentum and conservation of angular momentum. (Ch. 9)
- Week of Nov. 23** Stretching and compression; Young's modulus; Shear deformation, Shear modulus; Volume deformation, Bulk modulus; Hook's law and ideal spring; Simple harmonic motion. (Ch. 10)
- Week of Nov. 30** Energy and SHM; The pendulum; Damped and driven harmonic motion, resonance. (Ch. 10)  
**REVIEW**

## ASSIGNMENTS, LABS and TESTS

September 10	Problem set #1	Lab.1: Graphic error analysis
September 17	Problem set #2	Lab.2: Kinematics of non-uniform forces
September 24	Problem set #3 Class test	Lab.3: Acceleration due to gravity
October 1	Problem set #4	Lab.4: Handout: Equilibrium of Forces
October 8	Problem set #5 Class test	Lab.5: Atwood's Pulley
October 15	Review	Midterm Exam
October 22	Problem set #6 Class test	Lab.6: Conservation of energy
October 29	Problem set #7	Lab.7: Collision ramp
November 5	Problem set #8 Class test	Lab.8: Moment of Inertia
November 12	Problem set #9	Midterm Exam
November 19	Problem set #10	Lab.9: Hook's law
November 26	Problem set #11 Class test	Lab.10: Simple Pendulum

### Grading Procedures

9- Point Grade	Percentage Equivalence
9	90 - 100
8	80 - 89
7	72 - 79
6	65 - 71
5	57 - 64
4	50 - 56
3	45 - 49
2	26 - 44
1	0 - 25