

Franklin & Marshall College - Physics and Astronomy Department
 Physics 111: Fundamental Physics I (Section A)
 F. Crawford
 Spring 2015 Course Schedule

Lecture Schedule

Day	Date	Lecture Topics	Reading
W	Jan 14	Introduction; Length, Mass and Weight	Ch. 1
F	Jan 16	Units; Graphs; Derivatives and Integrals	Ch. 1
M	Jan 19	Vector Calculus, Dot and Cross Product; Speed	Ch. 2,3
W	Jan 21	Velocity; Vector Addition; Inertial Frames	Ch. 2,3
F	Jan 23	Acceleration; Free Fall	Ch. 2,3
M	Jan 26	Free Fall; Projectiles	Ch. 2,3
W	Jan 28	Inertia; Momentum; Newton's Laws	Ch. 4
F	Jan 30	Free Body Diagrams; Weight	Ch. 4
M	Feb 2	Inclined Planes; Coupled Motions	Ch. 4
W	Feb 4	Friction; Translational Equilibrium	Ch. 5
F	Feb 6	Centripetal Acceleration; Circular Motion	Ch. 5
M	Feb 9	Law of Gravity; Gravity of Sphere; Terrestrial Gravity	Ch. 6
W	Feb 11	Kepler's Laws; Orbits	Ch. 6
F	Feb 13	Gravitational Fields	Ch. 6
M	Feb 16	Work; Conservative Forces	Ch. 7,8
W	Feb 18	Kinetic and Potential Energy; Conservation of Energy	Ch. 7,8
F	Feb 20	Escape Velocity; Power	Ch. 8
M	Feb 23	Momentum; Impulse; Conservation of Momentum	Ch. 9
W	Feb 25	Elastic and Inelastic Collisions	Ch. 9
F	Feb 27	Two-dimensional Collisions	Ch. 9
M	Mar 2	Rotational Displacement, Velocity, and Acceleration; Torque	Ch. 10,11
W	Mar 4	Center of Gravity and Mass; Moment of Inertia	Ch. 10,11
F	Mar 6	Rotational Kinetic Energy; Angular Momentum	Ch. 10,11
M	Mar 9	Hooke's Law; Stress and Strain; Elastic Moduli	Ch. 12
W	Mar 11	Simple Harmonic Motion; Oscillations	Ch. 14
F	Mar 13	Transverse, Compression Waves; Sounds Waves; Intensity	Ch. 15
M	Mar 16	<i>Spring Break</i>	<i>none</i>
W	Mar 18	<i>Spring Break</i>	<i>none</i>
F	Mar 20	<i>Spring Break</i>	<i>none</i>
M	Mar 23	Sound Speed; Sound Level; Beats	Ch. 16
W	Mar 25	Standing Waves; Doppler Effect	Ch. 15,16
F	Mar 27	Mass Density; Hydrostatic Pressure; Atmospheric and Gauge Pressure	Ch. 13
M	Mar 30	Buoyant Force; Continuity Equation	Ch. 13
W	Apr 1	Bernoulli's Equation; Viscous Flow	Ch. 13
F	Apr 3	Thermal Expansion; Ideal Gas Law	Ch. 17
M	Apr 6	Phase Diagrams; Kinetic Theory	Ch. 18
W	Apr 8	Heat and Temperature; Specific Heat	Ch. 19
F	Apr 10	Changes of State; Radiation, Convection, and Conduction	Ch. 19
M	Apr 13	Thermodynamic Work; Heat and Internal Energy	Ch. 19
W	Apr 15	Isothermal and Adiabatic Changes	Ch. 19
F	Apr 17	Carnot Engine; Efficiency	Ch. 20
M	Apr 20	Entropy; Microstates and Macrostates	Ch. 20
W	Apr 22	Review - <i>all course work due today</i>	<i>none</i>

All readings are from *Physics for Scientists and Engineers* (4th edition) by Giancoli.

Two **Midterm Exams** will be given during the semester on Tue Feb 17 and Tue Mar 31 during the common exam period.

The **Final Exam** will be during the final exam period and will be scheduled by the Registrar's office.