



Worcester Polytechnic Institute

PH 1150
Physics of Living Systems
Term E1-2026

Prof. Snehalata Kadam

CALENDAR/SYLLABUS

The schedule of lecture topics is shown below. Depending on the intensity per chapter some topics will require more time.

University Physics (15th Ed) by Young and Freedman. Exam dates are shown in red/bold (all quizzes will be held during the class times).

Week	Date	Lecture Topic	Chapter
1	Thursday and Friday May 21 st to 22 nd 2026	Introduction to the course Fluid Mechanics: Gases, Liquids and Density and Pressure in a fluid, Buoyancy	Ch.12
1	Monday to Friday May 25 th to 29 th 2026	Fluid Mechanics Continued: Continuity Equation and Bernoulli's principle, and Viscosity	Ch.12
2	Monday to Friday June 1 st to 5 th 2026	Sound: Sound waves, Sound Intensity, The Doppler Effect Temperature, Heat and Thermal Properties of Matter: Thermal Equilibrium, Thermometers, Mechanisms of Heat Transfer. The First Law of Thermodynamics: Internal Energy, the First Law of Thermodynamics	Ch 15 Ch 16 Ch. 17
3	Monday and Tuesday June 8 th to 9 th 2026	The Second Law of Thermodynamics: Heat Engines (engine as a biological organism), Entropy in Living Organisms	18 and 19
3	Wednesday June 10th, 2026	Exam 1	Study Guide Part A

3	Thursday and Friday June 11 th and 12 th 2026	EM Waves and Optics: The nature of Light, Reflection and Refraction, Total Internal Reflection Optical Lenses and Devices: Interference and Diffraction:	Ch. 20 Ch. 32, 36
4	Monday to Thursday June 15 th to 18 th 2026	Geometric Optics: Reflection and Refraction at a plane surface, Reflection and Refraction at a spherical surface, cameras, Lenses, The eye, Microscopes	Ch. 34
5	Monday to Thursday June 22 nd to 25 th 2026	Nuclear physics and Medical Applications: Properties of Nuclei, Nuclear Binding and Structure, Nuclear Stability and Radioactivity, Activities and Half Lives, Nuclear physics and Medical Applications: Biological Effects of Radiation, Radioactive Isotopes for Medicine	Ch. 43
5	Friday June 26 th	Exam 2	Study Guide Part B