

Course Outline for Physics-145 (Physics for Health Science Students) Summer 2019

Credit Hours: 3.

Credit Distribution: 3 (2 + 0 + 1).

Level: Third.

Pre-requisites: None.

Textbook: Physics by Kane and Sternheim (3rd Edition). Course slides: <https://fac.ksu.edu.sa/nbennessib/course/36691>

Course Material:

Chapter 1: Motion in a Straight Line

- 1.2 Displacement, Average Velocity
- 1.3 Instantaneous velocity
- 1.4 Acceleration
- 1.5 Finding the motion of an object

Chapter 2: Vectors

- 2.1 An Introduction to Vectors

Chapter 3: Newton's Laws of Motion

- 3.3 Newton's First Law
- 3.4 Equilibrium
- 3.5 Newton's Third Law
- 3.6 Newton's Second Law
- 3.8 Some Examples of Newton's Laws
- 3.12 Friction

Chapter 6: Work, Energy, and Power

- 6.1 Work and Energy
- 6.2 Kinetic energy
- 6.3 Potential energy
- 6.4 Dissipative Forces
- 6.6 Solving Problems using Work and Energy
- 6.9 Power

Chapter 13: The Mechanics of Nonviscous Fluids

- 13.2 The Equation of Continuity; Streamline Flow
- 13.3 Bernoulli's Equation
- 13.4 Static Consequences of Bernoulli's Equation
- 13.7 Dynamic Consequences of Bernoulli's Equation

Chapter 17: Direct Currents

- 17.1 Electric Current
- 17.2 Resistance
- 17.5 Series and Parallel Resistors; Kirchhoff's Rules
- 17.12 Kirchhoff's Rules in Complex Circuits

Chapter 24: Mirrors, Lenses and Imaging Systems

- 24.1 Mirrors
- 24.2 Lenses
- 24.3 Image Formation
- 24.4 The Power of a Lens; Aberrations

Chapter 26: Particle Properties of Light: The Photon

- 26.1 The Photoelectric Effect
- 26.3 X-Rays

Chapter 30: Nuclear Physics

- 30.1 Radioactivity
- 30.2 Half-Life
- 30.9 Radioactive Decays

Chapter 31: Ionizing Radiation

- 31.1 The interaction of Radiation with Matter
- 31.2 Radiation Units

Grading Policy:

Midterm Exam 1	15 pts	Date, time, place: TBA. Material: Chapters 1, 2, 3, 6.
Midterm Exam 2	15 pts	Date, time, place: TBA. Material: Chapters 13, 17, 24.
Final Exam	40 pts	Date: Thursday 29-11-1440 (August 1 st , 2019). Time: 13:00. Place: TBA. Material: All 10 chapters.
Lab Work	30 pts	Please coordinate with the lab instructor.
Total	100 pts	

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