

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
Department of Physics

Physics 8.01

Fall 2009

**Reading Assignments 8.01**

Website: <http://web.mit.edu/8.01t/www/>

Textbook: Young and Friedman, *University Physics Twelfth Edition*

Students are responsible for preparing in advance for class.

**W01D2 Introduction to Teal, Introduction to Newtonian Mechanics**

**W01D3 Dimensional Analysis**

Reading Assignment: Young and Freedman: 1.1-1.2

TEAL Notes: Dimensional Analysis

**W02D1 Kinematics in One Dimension**

Reading Assignment: Young and Freedman: 2.1-2.6

**W02D02 Kinematics in Two Dimensions**

Reading Assignment: Young and Freedman: 3.1-3.3, 12.1-12.2, 12.6

**W02D3 Group Problem Solving: Kinematics**

**W03D1 The Concept of Force; Vectors & Force - Force Diagrams**

Reading Assignment: Young and Freedman: 4.1-4.6, 5.1-5.3

**W03D2 Application of Newton's Second Law, Experiment 1: Force and Motion**

Reading Assignment: Young and Freedman Chapter 4.1-4.6, 5.1-5.3, [Experiment 1: Force and Motion](#)

**W03D3 Quiz 1 One and Two Dimensional Kinematics; Force Problem Solving**

**W04D1 Circular Motion**

Reading Assignment: Young and Freedman 3.4, 5.4-5.5

**W04D2 Circular Motion Dynamics**

Reading Assignment: Young and Freedman: 3.4; 5.4-5.5

Experiment 2: Circular Motion

**W04D3 Quiz 2 Force and Linear Motion; Circular Motion Problem Solving**

**W05D1 Work and Energy**

Reading Assignment: Young and Freedman: 6.1-6.4

**W05D2 Potential Energy and Conservation of Energy**

Reading Assignment: Young and Freedman 7.1-7.5, 12.3

**W05D3 Group Problem Solving: Conservation of Mechanical Energy**

**W06D1 Holiday No Class**

**Exam One Tuesday Oct 13 7:30-9:30 pm**

(See announcements page for rooms)

**W06D2 Mechanical Energy and Simple Harmonic Oscillator**

Reading Assignment: Young and Freedman: 13.1-13.5

**W06D3 No Class**

**W07D1 Momentum and Impulse**

Reading Assignment: Young and Freedman: 8.1-8.5

**W07D2 Collision Theory**

Reading Assignment: Young and Freedman: 8.1-8.5

**W07D3 Quiz 3 Energy; Conservation of Momentum Problem Solving**

**W08D1 Continuous Mass Flow**

Reading Assignment: Young and Freedman: 8.6

Class Notes: Continuous Mass Flow

**W08D2 Continuous Mass Flow; Experiment 3: CO<sub>2</sub> Rocket**

Reading Assignment: Young and Freedman: 8.6; Experiment 3: CO<sub>2</sub> Rocket

Class Notes: Continuous Mass Flow

**W08D3 Group Problem Solving: Conservation of Momentum**

**W09D1 Two-Dimensional Rotational Kinematics**

Reading Assignment: Young and Freedman: 9.1-9.6, 10.5

**W09D2 Angular Momentum and Two-Dimensional Rotational Dynamics**

Reading Assignment: Young and Freedman: 10.1-10.2, 10.5-10.6; 11.1-11.3

**W09D3 Quiz 4 Momentum Two Dimensional Rotational Dynamics; Statics Problem Solving**

**W10D1 Experiment 4: Moment of Inertia and Angular Collisions**

Reading Assignment: Experiment 4: Moment of Inertia and Angular Collisions

**W10D2 Exam Two Review**

**Exam Two Nov 12 Energy, Momentum, and Rotational Motion 7:30-9:30 pm**  
(See announcements page for rooms)

**W10D3 No Class**

**W11D1 Pendulums; Rolling without Slipping**

Reading Assignment: Young and Freedman: 13.5-13.6, 10.3

**W11D2 Translation and Rotation**

Reading Assignment: Young and Freedman: 10.3-10.6

**W11D3 Quiz 5 Rotational Dynamics**

**W12D1 Central Force Motion**

Reading Assignment: Young and Freedman: 12.4-12.5, 12.8

**W12D2 No Class**

**W12D3 Holiday No Class**

**W13D1 Three Dimensional Rotational Dynamics**

Reading Assignment: Young and Freedman Chapter 10.7

**W13D2 Three Dimensional Rotational Dynamics: Gyroscopes**

Reading Assignment: Young and Freedman Chapter 10.7

**W13D3 Quiz 6 Angular Momentum**

**W14D1 Three Dimensional Rotational Dynamics: Gyroscopes**

Reading Assignment: Young and Freedman Chapter 10.7

**W14D2 Sections 1-3 Last Day Classes Final Review**

Hour One and Hour Two: Final Review