

**LECTURES**

Lecture 1: Introduction, Units, Vectors, Cartesian Coordinates

Giancoli: sections 1-4, 1-5, 1-7, 3-1 thru 3-5, 7-2, and 11-1

K&K: sections 1.1 thru 1.4, 2.3

Lecture 2: 1-D Kinematics

Giancoli: chapter 2

K&K: sections 1.5 thru 1.7

Lecture 3: Vector Kinematics, Projectile Motion, Uniform Circular Motion

Giancoli: sections 3-6 thru 3-9

K&K: sections 1.6 thru 1.8

Lecture 4: Plane Polar Coordinates, Non-uniform Circular Motion

Giancoli: sections 5-4, 10-1, 10-2, and 10-4

K&K: section 1.9

Lecture 5: Newton's Laws, Inertial Reference Frames, Gravity

Giancoli: section 3-10, chapter 4, and sections 6-1 thru 6-3

K&K: chapter 2

Lecture 6: Tension, Normal Force, Friction

Giancoli: sections 4-6 thru 4-8, 5-1 thru 5-3, and 6-4

K&K: section 2.5

Lecture 7: Spring Force, Simple Harmonic Motion

Giancoli: sections 14-1 thru 14-5

K&K: section 2.5

Lecture 8: catch-up day for lectures 5-7, and/or start on lecture 9

Lecture 9: Momentum, Impulse, Systems of Particles, Center of Mass

Giancoli: sections 9-1 thru 9-3, 9-8, and 9-9

K&K: sections 3.1, 3.2, and 3.4

Lecture 10: Collisions, Momentum Transport, Mass Flow

Giancoli: section 9-4, 9-10

K&K: sections 3.3, 3.5, and 3.6

Lecture 11: Torque, Angular Momentum

Giancoli: 10-5, 10-9, 11-2 thru 11-4, and 11-7

K&K: sections 6.1 thru 6.3

## Lecture 12: Rigid Bodies, Moment of Inertia, Rolling Without Slipping

Giancoli: 10-3, 10-6 thru 10-8, and 11-5

K&amp;K: sections 6.4 thru 6.6

## Lecture 13: Translation and Rotation

Giancoli: 10-11

K&amp;K: section 6.7

## Lecture 14: Work, Kinetic Energy, Power

Giancoli: sections 7-1, 7-3, 7-4, and 8-8

K&amp;K: sections 4.1 thru 4.6 and 4.13

## Lecture 15: Conservative Forces, Potential Energy

Giancoli: sections 8-1 thru 8-3, 8-7, and 8-9

K&amp;K: sections 4.7 thru 4.9 and 4.11

## Lecture 16: Non-conservative Forces, Collisions Revisited

Giancoli: sections 8-4 thru 8-6 and 9-5 thru 9-7

K&amp;K: sections 4.11, 4.12, and 4.14

## Lecture 17: Planetary Motion, Kepler's Laws

Giancoli: section 6-5

K&amp;K: section 9.3, 9.6, 9.7

## Lecture 18: Drag Forces, Terminal Velocity

Giancoli: section 5-5

K&amp;K: section 2.5

## Lecture 19: Non-inertial Reference Frames

Giancoli: sections 11-9 and 11-10

K&amp;K: chapter 8

## Lecture 20: Damped and Forced Harmonic Oscillations

Giancoli: sections 14-7 and 14-8

K&amp;K: chapter 10

## Lecture 21: TBA

**EXAMS**

Exam 1 will emphasize the material from Lectures 1 through 4 (Problem Sets 1 and 2).

Exam 2 will emphasize the material from Lectures 5 through 8 (Problem Sets 3 and 4).

Exam 3 will emphasize the material from Lectures 9 through 13 (Problem Sets 5 and 6).

Exam 4 will emphasize the material from Lectures 14 through 18 (Problem Sets 7 and 8).

The final exam will emphasize the material from Lectures 1 through 18 (Problem Sets 1 through 8), and may also include very simple questions about the material from Lectures 19 and 20.