

Three Rivers Community College Syllabus/Physics 221, Fall 2015/BLS

Text: Physics for Scientists and Engineers; by Douglass Giancoli, 4th ed

Instructor: Barry Stoner, barry.Stoner@cox.net, cell: 860-682-2787

Week Topics

- 1, 8/31 Units, Measuring, Kinematics, Scalars & Vectors
Lab #1: Measuring length, mass, time; Calculating density**
- 2, 9/14 Displacement, Velocity and Acceleration; Free Fall
Lab#2: The Force Table and Equilibrium of Forces**
- 3, 9/21 Vectors in Two Dimensions, Projectile Motion
Lab#3: Studying Projectile Motion using the Spring Gun**
- 4, 9/28 Newton's Laws of Motion, Free Body Diagrams
Lab#4: Measuring Gravity using the Atwood Machine**
- 5, 10/5 FIRST EXAM (Chapters 1, 2 & 3) 75 minutes; Friction
Lab#5: Measuring Friction Coefficients**
- 6, 10/19 Free Body Diagrams with Friction, Circular Motion
No Lab: Time will be devoted to problem solving practice**
- 7, 10/26 Gravitational Fields, Work and Energy Concepts
Lab#6: Hooke's Law and determining spring constants**
- 8, 11/2 SECOND EXAM (Chapters 4, 5, 6) 75 minutes: Conservation of Energy
Lab#7: Energy Conservation measuring kinetic and potential energies**
- 9, 11/9 Conservative and Non Conservative Systems, Linear Momentum
Lab #8: The First Condition for Equilibrium, "The Bird on the Wire."**
- 10, 11/16 Momentum Conservation, Elastic and Inelastic Systems
Lab#9: Investigating Linear Momentum using the Ballistic Pendulum**
- 11, 11/23 Introducing the Second Condition for Equilibrium, Material Properties
Lab#10: Balancing Moments**
- 12, 11/30 THIRD EXAM (Chapters 7, 8 & 9) 75 minutes: Rotational Motion
Lab#11:**
- 13, 12/7 Torque and Moments of Inertia
Lab#12: Determining Moment of Inertia for Rotating Disk**
- 14, 12/14 Angular Momentum, Simple Harmonic Motion (SHM)
Lab: Determining Characteristics of SHM**
- 15, 12/21 FINAL EXAMINATION (Chapters 10, 11, 12, 14)**

Course grading will be based 75% exam scores and certain assigned homework, 25% laboratory reports.