**لمادة الدراسية:**

[١١٠ فيز (مقرر سابق)](http://fac.ksu.edu.sa/bkurtass/course/150639)

**Physics for Scientists and Engineers, by J. W. Jewett and R. A. Serway, 8th Ed.**

**Chapter 1:**Physics and Measurement  
o 1.1: Standards of Length, Mass, and Time  
o 1.3: Dimensional Analysis  
o 1.4: Conversion of Units  
o 1.5: Estimates and Order-of-Magnitude Calculations  
**Chapter 3:**Vectors  
o 3.1: Coordinate Systems  
o 3.2: Vector and Scalar Quantities  
o 3.3: Some Properties of Vectors  
o 3.4: Components of a Vector and Unit Vectors  
o 7.3: The Scalar Product of Two Vectors  
o 11.1: The Vector Product  
**Chapter 2:**Motion in One Dimension  
o 2.1: Position, Velocity, and Speed  
o 2.2: Instantaneous Velocity and Speed  
o 2.3: Analysis Models: The Particle Under Constant Velocity  
o 2.4: Acceleration  
o 2.5: Motion Diagrams  
o 2.6: The Particle Under Constant Acceleration  
o 2.7: Freely Falling Objects  
**Chapter 5:**The Laws of Motion  
o 5.1 The Concept of Force  
o 5.2 Newton’s First Law and Inertial Frames  
o 5.3 Mass  
o 5.4 Newton’s Second Law  
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o 5.7: Some Applications of Newton's Laws (**Analysis Models Using Newton’s Second Law)**  
o 5.8: Forces of Friction  
**Chapter 13:**Universal Gravitation  
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o 13.3: Free-Fall Acceleration and the Gravitational Force  
**Chapter 7:**Energy of a System  
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o 7.2: Work Done by a Constant Force  
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o 7.8: Relationship Between Conservative Forces and Potential Energy  
o 7.9: Energy Diagrams and Equilibrium of a System  
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o 8.2: Analysis Model: Isolated System (Energy)  
o 8.3: Situations Involving Kinetic Friction  
o 8.4: Changes in Mechanical Energy for Nonconservative Forces  
o 8.5: Power  
**Chapter 9:**Linear Momentum and Collisions  
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o 9.2: Analysis Model: Isolated System (Momentum)  
o 9.3: Analysis Model: Nonisolated System (Momentum)  
o 9.4: Collisions in One Dimension

**Chapter 12:**Static Equilibrium and Elasticity  
o 12.4: Elastic Properties of Solids  
**Chapter 14:**Fluid Mechanics  
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o 14.2: Variation of Pressure with Depth  
o 14.3: Pressure Measurements  
o 14.5: Fluid Dynamics  
o 14.6: Bernoulli's Equation

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**Chapter 19:**Temperature  
o 19.1: Temperature and the Zeroth Law of Thermodynamics  
o 19.2: Thermometers and the Celsius Temperature Scale  
o 19.3: The Constant-Volume Gas Thermometer and the Absolute Temperature Scale.  
**Chapter 20:**The First Law of Thermodynamics  
o 20.1: Heat and Internal Energy  
o 20.2: Specific Heat  
o 20.7: Energy Transfer Mechanisms in Thermal Processes.