Instructor: Dr. Steeves  
Office: Elliott 116  
Email: gsteves@uvic.ca  
Lectures: Tue., Wed., Fri.: 1:30 pm - 2:20 pm, Ell 062  
Course website: http://coursespaces.uvic.ca

Abstract: Rotational and simple harmonic motion; wave motion and sinusoidal waves; reflection, refraction, and interference; optics; sound and the Doppler effect; de Broglie waves and the hydrogen atom; radioactivity and principles of quantum mechanics.

Text: University Physics, 14th edition, Young and Freedman (13th edition is acceptable). You need to access www.masteringphysics.com to complete the regular assignments. The required course-ID is: MPSTEEVES79016

Labs: All lab sections are held in the Elliott Lab Wing, room 128. Introduction week for all sections: January 7 - 11, 2019.

Office Hours: Elliott 116: Mon. 3:00 pm - 4:30 pm or by appointment

Prerequisites: PHYS 120  
Pre- or corequisite: MATH 101

Calculator: Sharp EL-510RNB (Available at bookstore for $14.50).

Grading scheme: Final grades will be calculated based on the following two grading schemes. Your grade will be the higher of the two calculated grades:

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<th>Scheme I</th>
<th>Scheme II</th>
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<td>Assignments</td>
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<td>Labs</td>
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Topics: University Physics, 14th edition, Young and Freedman  
Sections relevant to the lectures.

Chapter 3: Motion in Two or Three Dimensions  
3.4: Motion in a Circle

Chapter 5: Applying's Newton's Laws  
5.4: Dynamics of Circular Motion

Chapter 9: Rotation of Rigid Bodies  
9.1: Angular Velocity and Acceleration
9.2: Rotation with Constant Angular Acceleration
9.3: Relating Linear and Angular Kinematics
9.4: Energy in Rotational Motion
9.5: Parallel-Axis Theorem
9.6: Moment-of-Inertia Calculations

Chapter 10: Dynamics of Rotational Motion
  10.1: Torque
  10.2: Torque and Angular Acceleration for a Rigid Body
  10.3: Rigid-Body Rotation About a Moving Axis
  10.4: Work and Power in Rotational Motion
  10.5: Angular Momentum
  10.6: Conservation of Angular Momentum

Chapter 13: Gravitation
  13.1: Newton’s Law of Gravitation
  13.2: Weight
  13.3: Gravitational Potential Energy
  13.4: The Motion of Satellites
  13.5: Kepler’s Laws and the Motion of Planets

Chapter 14: Periodic Motion
  14.1: Describing Oscillation
  14.2: Simple Harmonic Motion
  14.3: Energy in Simple Harmonic Motion
  14.4: Applications of Simple Harmonic Motion
  14.5: The Simple Pendulum
  14.6: The Physical Pendulum
  14.7: Damped Oscillations
  14.8: Forced Oscillations and Resonance

Chapter 15: Mechanical Waves
  15.1: Types of Mechanical Waves
  15.2: Periodic Waves
  15.3: Mathematical Description of a Wave
  15.4: Speed of a Transverse Wave
  15.5: Energy in Wave Motion
  15.6: Wave Interference, Boundary Conditions, and Superposition
  15.7: Standing Waves on a String
  15.8: Normal Modes of a String

Chapter 16: Sound and Hearing
  16.1: Sound Waves
  16.2: Speed of Sound Waves
  16.3: Sound Intensity
  16.4: Standing Sound Waves and Normal Modes
16.5: Resonance and Sound
16.6: Interference of Waves
16.7: Beats
16.8: The Doppler Effect

Chapter 35: Interference
  35.1: Interference and Coherent Sources
  35.2: Two-Source Interference of Light
  35.3: Intensity in Interference Patterns

Chapter 36: Diffraction
  36.2: Diffraction from a Single Slit
  36.3: Intensity in the Single-Slit Pattern

Chapter 33: The Nature and Propagation of Light
  33.1: The Nature of Light
  33.2: Reflection and Refraction
  33.3: Total Internal Reflection

Chapter 34: Geometric Optics
  34.1: Reflection and Refraction at a Plane Surface
  34.2: Reflection at a Spherical Surface
  34.3: Refraction at a Spherical Surface
  34.4: Thin Lenses

Chapter 38: Photons: Light Waves Behaving as Particles
  38.1: Light Absorbed as Photons: The Photoelectric Effect
  38.2: Light Emitted as Photons: X-Ray Production
  38.3: Light Scattered as Photons: Compton Scattering and Pair Production

Chapter 39: Particles Behaving as Waves
  39.1: Electron Waves