



**DEPARTMENT OF SCIENCE**

**COURSE OUTLINE – FALL 2014**

**PC 1240 INTRODUCTORY GENERAL PHYSICS I – 3.0 (3-0-3) UT (3)**

**INSTRUCTOR:** Dr. Robert (Bert)      **PHONE:** 780-539-2008  
Hunt P. Eng. FEC

**OFFICE:** C 414      **E-MAIL:** bhunt@gprc.ab.ca

**OFFICE HOURS:** MTWR noon-2 pm

**PREREQUISITE(S):** Physics 20 or equivalent, and Pure Mathematics 30 (Math 30-1).  
Physics 30 is strongly recommended. Credit may be obtained for only one of PHYS  
124, 144, or EN PH 131.

**REQUIRED TEXT/RESOURCE MATERIALS:** PHYSICS Walker 4<sup>th</sup> Edition

**CALENDAR DESCRIPTION:**

This is an algebra-based course for students in life, environmental, and medical sciences. It guides the student through two distinct types of motion: motion of matter (particles) and wave motion. Vectors, forces, bodies in equilibrium, elasticity and fracture; review of kinematics and basic dynamics; conservation of momentum and energy; circular motion; vibrations; waves in matter; wave optics; sound; black body radiation, photons, de Broglie waves; models of the atom. Examples relevant in environmental, life and medical sciences will be emphasized.

**CREDIT/CONTACT HOURS:** 3 hours lecture and 3 hours lab per week

**DELIVERY MODE(S):**        **COURSE OUTLINE**

**Chapter 1 Introduction to Physics**

**Chapter 2 One-Dimensional Kinematics**

**Chapter 3 Vectors in Physics**

**Chapter 4 Two-Dimensional Kinematics**

**Chapter 5 Newton's Laws of Motion**

**Chapter 6 Applications of Newton's Laws**

**Chapter 7 Work and Kinetic Energy (Sections 7.1-2, 4)**

**Chapter 8 Potential Energy and Conservation of Energy (Sections 8.1-4)**

**Chapter 9 Linear Momentum and Collisions (Sections 9.1-7)**

**Chapter 10 Rotational Kinematics and Energy**

**Chapter 11 Rotational Dynamics and Static Equilibrium**

**Chapter 12 Gravity (Sections 12.1-2, 4-5)**

**Chapter 13 Oscillations about Equilibrium (Sections 13.1-6, except The Physical Pendulum in Section 13.6)**

**Chapter 14 Waves and Sound (Sections 14.1-2, 4-9)**

**Chapter 28 Physical Optics: Interference and Diffraction (Sections 28.1-2,4,6)**

**Chapter 25 Electromagnetic Waves (Sections 25.2-3)**

**TRANSFERABILITY :**        **It is a University of Alberta Course**

**\*\* Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability.**

**GRADING CRITERIA:**

<b>GRANDE PRAIRIE REGIONAL COLLEGE</b>			
<b>GRADING CONVERSION CHART</b>			
<b>Alpha Grade</b>	<b>4-point Equivalent</b>	<b>Percentage Guidelines</b>	<b>Designation</b>
<b>A<sup>+</sup></b>	<b>4.0</b>	<b>90 – 100</b>	<b>EXCELLENT</b>
<b>A</b>	<b>4.0</b>	<b>85 – 89</b>	
<b>A<sup>-</sup></b>	<b>3.7</b>	<b>80 – 84</b>	<b>FIRST CLASS STANDING</b>
<b>B<sup>+</sup></b>	<b>3.3</b>	<b>77 – 79</b>	
<b>B</b>	<b>3.0</b>	<b>73 – 76</b>	<b>GOOD</b>
<b>B<sup>-</sup></b>	<b>2.7</b>	<b>70 – 72</b>	
<b>C<sup>+</sup></b>	<b>2.3</b>	<b>67 – 69</b>	<b>SATISFACTORY</b>
<b>C</b>	<b>2.0</b>	<b>63 – 66</b>	
<b>C<sup>-</sup></b>	<b>1.7</b>	<b>60 – 62</b>	
<b>D<sup>+</sup></b>	<b>1.3</b>	<b>55 – 59</b>	<b>MINIMAL PASS</b>
<b>D</b>	<b>1.0</b>	<b>50 – 54</b>	
<b>F</b>	<b>0.0</b>	<b>0 – 49</b>	<b>FAIL</b>
<b>WF</b>	<b>0.0</b>	<b>0</b>	<b>FAIL, withdrawal after the deadline</b>

<b>EVALUATIONS:</b>	Assignments	15%	
	Laboratories	20%	
	Mid-Term Examination	20%	(Oct. 15/14)
	Final Examination	45%	(TBA)

**STATEMENT ON PLAGIARISM AND CHEATING:**

Refer to the Student Conduct section of the College Admission Guide at <http://www.gprc.ab.ca/programs/calendar/> or the College Policy on Student Misconduct: Plagiarism and Cheating at <https://www.gprc.ab.ca/about/administration/policies/>

\*\*Note: all Academic and Administrative policies are available on the same page.

**COURSE SCHEDULE/TENTATIVE TIMELINE:**

<b>Lecture</b>	<b>M W</b>	<b>8:30 - 9:50 a.m.</b>	<b>J202</b>
<b>Laboratory</b>	<b>W or R</b>	<b>2:30 - 5:20 p.m.</b>	<b>J103</b>

**LABORATORY COMPONENT**

<b>Lab #</b>	<b>Source</b>	<b>Content</b>	<b>Week of</b>
<b>1</b>	<b>Exp. #1</b>	<b>Graphical Analysis</b>	<b>Sept. 8</b>
<b>2</b>	<b>Handout</b>	<b>Vector Addition</b>	<b>Sept. 15</b>
<b>3</b>	<b>Exp. #3</b>	<b>Non-Uniform Motion</b>	<b>Sept. 22</b>
<b>4</b>	<b>Exp. #2</b>	<b>Acceleration Due to Gravity</b>	<b>Sept. 29</b>
<b>5</b>	<b>Exp. #4</b>	<b>Atwood's Pulley</b>	<b>Oct. 6</b>
<b>6</b>	<b>Exp. #5</b>	<b>Potential and Kinetic Energy</b>	<b>Oct. 20</b>
<b>7</b>	<b>Exp. #6</b>	<b>Collision of Ball</b>	<b>Oct. 27</b>
<b>8</b>	<b>Exp. #7</b>	<b>Standing Waves on a String</b>	<b>Nov. 3</b>
<b>9</b>	<b>Exp. #8</b>	<b>Speed of Sound in Air</b>	<b>Nov. 10</b>
<b>10</b>	<b>Exp. #9</b>	<b>Interference of Light</b>	<b>Nov. 17</b>