

Lawton Public Schools
PRE-AP PHYSICS & AP PHYSICS B: A 2 YEAR COURSE
PACING CALENDAR

Revised January 2008

Syllabus

TEXTBOOK:

Physics: Principles w/ Applications 6th edition
Giancoli

GRADING SCALE:

A: 90-100
B: 80-89
C: 70-79
D: 60-69
F: Below 60

SUPPLEMENTAL RESOURCES:

- (i) Experiments for Physics Labs,
Herbert H. Gottlieb
- (ii) Exploring Physics with the CBL
System, Brueningsen
- (iii) Physics Principles and Problems
Laboratory Manual, Merrill

OUR AP PHYSICS B COURSE IS A TWO YEAR COURSE CONSISTING OF A PRE-AP AND AN AP PHYSICS B YEAR. Students are required to take the FIRST YEAR Pre-AP course to enroll in the AP PHYSICS B course. Students will have completed Algebra I, Algebra II, Geometry, and Trigonometry as prerequisites for the PRE-AP PHYSICS B course. At the end of YEAR TWO the AP PHYSICS B test is available for all enrolled students. A passing grade on this test could net you 10 college credits for Physics.

ASSIGNMENTS/GRADING

1. LABORATORY (20%)

Typically lab experiments are open-ended in nature. You will be given an objective, a list of materials/equipment, and asked to design your own laboratory procedure including data acquisition and analysis. Class time is used strictly for the acquisition of data, carrying out the lab procedure. All data analysis and the lab write-up are to be completed outside of class time. **(C6 & C7)**

2. CLASS WORK (10%)

This grade includes your participation in class discussion, note taking, and in-class problem solving activities. **(C6)**

3. HOMEWORK (20%)

Homework is given for each unit/chapter. Assignments are generally due at the beginning of class. Late work will not receive full credit. You can turn in assignments at the beginning of class one day late; however, you will automatically lose 20% of the earned grade. One day excused absences require assignments to be turned in within the following two days. With extended absences, the student is expected to make arrangements with the teacher, as to when assignments will be turned in.

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4. QUIZZES AND TESTS (50%)

Tests are given after the completion of each unit and are worth 100 points each. Quizzes are given each Friday, include questions from homework or class notes, and are worth 10 points each. A lab test will be given after each lab and are worth 50 points each. Quizzes and tests can be made up before or after school on your own time if you miss a test due to an excused absence. This must be done the next day if you only missed the day of the test. In the event of absences of two or more days, the test must be made up within five days of your return. (This should be done as soon as possible so that the content is still fresh in your mind.) Arrangements can be made with the teacher in case of prolonged absence. When making up a test due to absence, you should expect a different test than was given to the rest of the class.

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PRE AP PHYSICS YEAR 1 SCHEDULE:

Course Req.	DATES	TOPICS	LABS (source)	CHAPTERS
<i>C1 Newtonian Mechanics</i>	08/19- 09/15	Mathematical Concepts & Measurement Kinematics in one dimension Kinematics in two dimensions; Vectors	(1) Measurement & Error (ii) (2) Graphic & Analytic Method of vector addition (i)	1-3
<i>C1 Newtonian Mechanics</i>	09/16- 10/13	Forces & Newton's Laws of Motion Dynamics of Circular Motion & Gravitation	(3) Acceleration due to gravity (iii) (4) Range of projectiles in 2 dimensions (iii) (5) Coefficient of friction (ii) (6) Friction on an Inclined Plane (i)	4-5
<i>C1 Newtonian Mechanics</i>	10/14- 10/28	Work & Energy Impulse & Momentum	(7) Conservation of Momentum (i) (8) Conservation of Energy (ii)	6-7
<i>C1 Newtonian Mechanics</i>	10/29- 11/23	Rotational Kinematics, Rotational Dynamics, Simple Harmonic Motion & Elasticity	(9) Crane Boom (i)	8-10
<i>C2 Fluid/Thermal Mechanics</i>	11/24- 12/15	Fluids Temperature & Heat Transfer of Heat	(10) Calorimetry (ii)	11-15
	12/13- 12/16	SEMESTER EXAM REVIEW/TEST		
<i>C2 Fluid/Thermal Mechanics</i>	1/02- 1/16	Ideal Gas Law & Kinetic Theory Thermodynamics	(10) Calorimetry (ii)	
<i>C4 Waves & Optics</i>	1/17- 2/14	Waves & Sound Principle of Superposition and Interference	(11) Standing Waves (i)	16-17
<i>C3 Electricity & Magnetism</i>	2/15- 3/15	Electric Forces & Electric Fields Electric Potential Energy and Electric Potential Capacitance	(12) Investigating Static Electricity (i) (13) Investigating Capacitance (ii & iii)	18-19
<i>C3 Electricity & Magnetism</i>	3/16- 4/21	Electric Circuits Magnetic Forces & Magnetic Fields Electromagnetic Induction AC Circuits	(14) Investigating Parallel Circuits (i)	20-23
<i>C3 Electricity & Magnetism C4 Waves & Optics</i>	4/21- 5/18	Electromagnetic Waves Reflection of Light: Mirrors Refraction of Light: Lenses & Optical Instruments Interference & Wave Nature of Light	(15) Snell's Law (ii) (16) Concave & Convex Lenses (i & ii)	24-27
<i>C1 Newtonian Mechanics</i>	5/19- 5/21	Kinematics, Momentum, Work & Energy Review Packet		
<i>C2 Fluid/Thermal Mechanics</i>	5/22- 5/24	Fluids, Thermodynamics Review Packet		
	5/25-5- 28	SEMESTER REVIEW/TEST		

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AP PHYSICS B SYLLABUS: YEAR 2 SCHEDULE:

Course Req.	DATES	TOPICS	LABS (source)	CHAPTERS	REVIEW PACKETS
<i>C1 Newtonian Mechanics</i>	08/19- 09/4	Measurement Kinematics in one dimension Kinematics in two dimensions; Vectors (Reviewing topics from YEAR 1)		1-3	
<i>C1 Newtonian Mechanics</i>	09/5- 09/24	Motion and Force & Dynamics Circular Motion & Gravitation (Reviewing topics from YEAR 1)	(1) Acceleration of a 2 block system w/friction (i) (2) Centripetal Force (i & iii)	4-5	
<i>C1 Newtonian Mechanics</i>	9/25- 10/11	Work & Energy Linear Momentum (Reviewing topics from YEAR 1)	(3) Work: Power & Efficiency (i)	6-7	Electricity & Magnetism Packet #1 (reviewing year 1) (C3)
<i>C1 Newtonian Mechanics</i>	10/12- 11/7	Rotational Motion, Equilibrium; Elasticity & Fracture, Simple Harmonic Motion Vibrations & Waves (Reviewing topics from YEAR 1)	(4) Crane Boom (i)	8-9, & 11	Waves, Sound, Geometric Optics Packet (reviewing year 1) (C4)
<i>C2 Fluid/Thermal Mechanics</i>	11/8- 11/24	Fluids Temperature & Kinetic Theory Heat Laws of Thermodynamics (Reviewing topics from YEAR 1)	(5) Archimede's Principle (ii)	10 & 13-15	Electricity & Magnetism Packet #2 (reviewing year 1) (C3)
<i>C4 Waves & Optics</i>	11/25- 12/12	Waves & Sound	(6) Open Tube (I & iii)	11-12	
	12/13- 12/16	SEMESTER EXAM REVIEW/TEST			
<i>C3 Electricity & Magnetism</i>	1/2-1/31	Electric Charge & Electric Field Electric Potential and Electric Energy Capacitance		16-17	Practice AP Exam 88 MC & FR
<i>C3 Electricity & Magnetism</i>	2/1-2/24	Electric Currents DC Circuits Magnetism Electromagnetic Induction and Faraday's Law; AC Circuits		18-21	Kinematics, Momentum, Work & Energy Packet (C1)
<i>C3 Electricity & Magnetism C4 Waves & Optics</i>	2/25- 3/15	Electromagnetic Waves Light & Geometric Optics Wave Nature of Light Optical Instruments	(7) Double Slit Interference (i & ii)	22-25	Fluids, Thermodynamics Packet (C2) Practice AP Exam 94 MC & FR
<i>C5 Atomic & Nuclear Physics</i>	3/16-4/4	Quantum Theory & Models of the Atom Quantum Mechanics Molecules & Solids Nuclear Physics & Radioactivity Elementary Particles	(8) Millikan's Experiment (I & ii) (9) Photoelectric Effect	Selected topics from 27-32	Review Sessions until test date All packets and 2 more practice exams
	3/15-5/5	Review for AP Exam			
	5/9	AP Physics B Exam			