Northview High School **Chris Kemp**
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Course Syllabus - Advanced Placement Physics C
2016-2017 School Year

Text: *Physics for Scientists and Engineers*, 7th edition. Serway, Jewett. Thomson – Brooks/Cole. 2008.

Course Description:
Advanced Placement Physics C is designed to prepare the student for the advanced placement examination (AP Physics C exam is Monday afternoon, May 8, 2017). The advanced placement examination provides students with the opportunity to earn college credit for courses taken in high school. The AP Physics C course covers the following topics in mechanics during the fall semester: kinematics; Newton's laws of motion; work, energy, and power; systems of particles and linear momentum; circular motion and rotation; and oscillations and gravitation. Topics dealing with electricity and magnetism are discussed during the spring semester. Calculus-based physics is included in this course. This course requires a conceptual application of physics in a problem solving environment. It will be of benefit to those who plan to pursue degrees in engineering and the physical sciences. This course is meant to be similar to two semesters of calculus-based physics at the university level. You will take two separate exams and earn two separate scores.

Student Expectations:
Due to the pace of this course and the necessity to review and prepare for the AP exam, students should understand the need to spend time outside of regular school hours preparing for the AP exam. In addition, since students can receive college credit for this course, students will be expected to perform significant work outside of class, as would be expected of college students. Students are expected to bring a scientific (~15$) or graphing calculator on a daily basis.

Behavior and Classroom Rules:
You are a young adult and responsible for yourself and your behavior. You are expected to act with respect toward anyone or anything with which you are involved. This includes but is not limited to your fellow students, teachers, other school personnel, classroom furniture, laboratory equipment and school property. Acting in such a manner will insure an enjoyable and productive classroom environment that can benefit all at Northview High School.
No food or drinks are allowed in the classroom with the exception of water in a container with a sealable top.

Communication:
I have included my email address at the top of the syllabus as well as the school phone number to facilitate parental communication. Since we do not have telephones in the classroom, I am able to check email more frequently than voice mail. Home Access Center (HAC) is an internet tool that can be used to access student grades. Please remember that grades will be entered upon completion of grading. HAC can be accessed via the link provided on the Northview High School website. I will use Edmodo to disperse information/documents to students. Make sure to set up your account.

Office Hours:
I usually arrive at school at 7:30 AM and depart at 4:00 PM. I am available most mornings and afternoons but do ask that students let me know that they will be coming by before or after school to avoid any potential conflicts. I am also available by appointment.

Fall Semester Objectives:

Unit 1: Measurement, One and Two-Dimensional Motion, Vectors (Chapters 1 through 4; 2½ weeks)

Unit 2: Forces, Laws of Motion and Circular Motion (Chapters 5 and 6; 3 weeks)

Unit 3: Energy of a System, Work and Conservation of Energy (Chapters 7 and 8; 3 weeks)

Unit 4: Linear Momentum, Collisions and Center of Mass (Chapters 9; 2 weeks)

Unit 5: Rotational Motion, Torque, Angular Momentum and Static Equilibrium
(Chapter 10, 11, and 12.1 – 12.3; 3 weeks)

Unit 6: Universal Gravitation including Kepler's Laws of Planetary Motion (Chapters 13; 1 week)

Unit 7: Oscillatory Motion (Chapter 15; 1½ weeks) – If this unit is not completed during the fall semester, it will be the introductory topic to begin spring semester. The schedule may be adjusted based on student progress.

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Spring Semester Objectives:

Unit 8: Electric Charge, Fields and Forces (Chapters 23; 2 weeks)

Unit 9: Gauss's Law; Conductors in Electrostatic Equilibrium (Chapter 24; 2 weeks)

Unit 10: Electric Potential; Capacitance and Dielectrics (Chapters 25 and 26; 2.5 weeks)

Unit 11: Current and Resistance; Circuits (Chapters 27 and 28; 2 weeks)

Unit 12: Magnetic Fields; Sources of Magnetic Fields; Biot-Savart Law and Ampere's Law (Chapters 29 and 30; 2 weeks)

Unit 13: Faraday's Law of Induction; Inductance (Chapters 31 and 32; 2 weeks)

Unit 14: Maxwell's Equations (Chapter 34; 1 week)

The above pacing may be adjusted as needed to accommodate student progress.

The time remaining prior to the AP Exam will be used to review. Students should begin reviewing on their own in March.

Grading:	Tests – includes unit tests and projects	45%
	Quizzes – includes lab quizzes and unit quizzes	30%
	Homework – WebAssign, other graded work	10%
	Final Exam	15%

Class Notebooks should be maintained and should include class notes, homework, classwork, lab reports and any other items relevant to AP Physics C.

Lab Notebooks are recommended but not required. These should be of the traditional lab/composition notebook type so that students can document their observations, record data and draw conclusions during laboratory activities. It is also strongly recommended that students have a USB/flash drive.

We will also use an online homework service (WebAssign) that will cost $10.50/student. I have found this to be a very effective means of assigning homework and allowing the students to have some degree of flexibility with their schedules. WebAssign problems should be completed in a neat and orderly manner on your own paper and organized in your class notebook. I will randomly verify that you have shown your work for WebAssign problems.

Honor Code:
Cheating has been defined as giving or receiving, in any form, information relating to a gradable experience including the use of sources of information other than those specifically approved by the teacher, either during or outside of class. I will strictly enforce the honor code policy as described in your student handbook. Violations of the honor code will result in a zero for the assignment and an honor code violation form placed in the student's disciplinary file. *Read the student handbook* (www.northviewhigh.com) *carefully to fully understand what constitutes an honor code violation.*

Late Work Policy:
Much of the daily homework is handled through Webassign. Typically, several days are given to complete assignments, so it is unlikely that a student should turn it in late. It is the student's responsibility to complete and submit their work online by the due date and time.

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Grading Scale:
A = 90 and above
B = 80 – 89
C = 70 – 79
F = 69 and below

Make-Up Work Policy:
Please reference the Northview High School Student/Parent Handbook for 2016-2017.

Northview High School Tardy Policy:
Please reference the Northview High School Student/Parent Handbook for 2016-2017. This policy will be strictly enforced. It is summarized as follows:

The first and second tardy to any class for the semester will receive a written reprimand. Repeated tardiness to the same class will result in assignment of the following consequences:

- First Tardy…….Verbal Warning and Restatement of Expection
- Second Tardy…….One Day Private Detention with Teacher
- Third Tardy……Referral to Administrator and Two Days Public Detention
- Fourth and Subsequent Tardies..……Referral to Administrator and One Day Saturday Opportunity School

The tardy cycle will be based upon the six-week grading periods.

Northview High School Recovery Procedure:
Please reference the Northview High School Student/Parent Handbook for 2016-2017. This policy will be strictly enforced. It is summarized as follows:

1. Recovery is for students who, despite a conscientious effort and communication with their teachers, have failed to demonstrate satisfactory understanding of course standards. It is not for the student who has been failing for many weeks and then wishes to recover during the final days of the course. Opportunities for students to recover from a 74 or below *cumulative* average will be provided when ***all*** work required to date has been completed and the student has demonstrated a legitimate effort to meet all course requirements. *Students who have not attempted to complete all course requirements are not eligible for recovery.*
2. Students may initiate recovery on major assessments starting with the second major assessment of the semester as long as they have made a legitimate effort to meet all course requirements including attendance. Unexcused absences may prevent this opportunity.
3. So that students stay focused on the content at hand and don't become overwhelmed and fall too far behind, they must initiate recovery on a major assessment within five school days of being informed of the grade on the assessment that caused their overall average to drop below a 74. Recovery work must be completed within ten school days prior to the end of the semester. The nature and type of recovery assignment is given at the discretion of the teacher.