Syllabus
Freshman Physics
Wachusett Regional High School

Course Information:

CP Freshman Physics
Grade 9
Fills 1 year of 3 year graduation requirement in science
Room D115

Instructor:

Carol Sullivan BA Physics, MA Physics
SUNY Geneseo
Email- carol_sullivan@wrsd.net
Extra help: before or after school, by appointment

TEXT: ***CONCEPTUAL PHYSICS*, 3rd ED. (1999) Hewitt**

Course Description

Freshman Physics is a physical science course specifically for 9th grade students with a strong mathematical background beginning their high school science curriculum. Using physics as a unifying theme, topics will integrate a wide range of disciplines, both within and outside the "standard" science arena. The course will serve as:

1. A logical and natural continuation of previous science courses, incorporating both review of studied concepts along with an emphasis on the subsequent extensions of these concepts and topics, and the introduction of new advanced topics and concepts.
2. An opportunity to relate scientific concepts and principles to the everyday happenings of life and to other disciplines through examples and activities demonstrating these inter-relationships.
3. A means to provide a wide range of "hands-on" activities that will be exciting and challenging.
4. A necessary foundation to satisfy the state framework guides in science and technology and assist in the MCAS testing.

This course will expand the understanding of motion, energy conservation, thermodynamics (heat), waves (mechanical and electromagnetic), and electromagnetism. All topics will incorporate basic scientific practices and methods. Projects, both individual and group, laboratory experiments, and research will all be integral parts of the program.

Course Philosophy

The main objective of this course is to excite students about the wonders of science while giving them the background to succeed in future science courses.

This course is essentially an applied introductory physics course. We will concentrate on examples and applications to real world situations typically presented in a freshman science course.

Students will be expected to design and conduct experiments and devise projects. In addition, they will share with and sometimes compete with other members of their class. Students will be expected to participate in group activities, research topics, use some simple (and sometimes very sophisticated) tools to collect and analyze data, discuss results and interpret the observations they have made. They will be challenged to make connections, solve problems, wrestle with contradictions, learn some historical background and distinguish between real science and pseudo (fake) science. They will learn how scientists think, and in doing so, they will come to know and own the questions of science and technology.

Students will see how science directly or indirectly impacts virtually everything in the world around them, and how science affects them, now, and in their future.

All available resources will be utilized to provide students with an atmosphere that is conducive to learning, so that they can be successful in their comprehension, and grow as an informed citizen in society.

Welcome to Mrs. Sullivan's Physics class

Department Philosophy- The Science department of Wachusett Regional High school strives for excellence in the science education of all its graduates. We recognize the fact that science is a human endeavor designed to achieve an increasingly comprehensive and reliable understanding of the human species and its environment. Scientific literacy is an important key to a functioning, technology-based society.

The learning objectives of the science department are:
*To instill and appreciation for the study of science as a human activity worthy of academic pursuit.

*To provide a basic understanding of how nature works in both living (life science) and non-living (physical science) systems, and to show their interrelatedness.

*To teach students the procedures and techniques used in scientific methodology (e.g. forming a hypothesis, conducting experiments, collecting and analyzing data to draw logical conclusions, ect.)

*To challenge and stimulate students to use, refine and communicate their powers of creative thinking, problem recognition, and problem solving in scientific application of both hypothetical and real world situations.

*To provide a strong foundation to help our graduates achieve some level of confidence and success in their introductory college classes.

The WRHS Science Curriculum is designed to provide all students the opportunity to meet the stated objectives in a logical, sequential comprehensive and varied manner.

Procedures are a part of life. We follow procedures for using a telephone book, boarding an airplane, approaching a traffic light, and attending a wedding. The reason we have procedures in life is so that people can function in society knowing the accepted and efficient ways other people do things.

1. When you enter the classroom you need to immediately go to your seat. Take out the materials you need for this class, then put your backpack, purses, and any other materials and supplies at the front of the room in the designated area. Then go back and sit down. **If you are not in your seat when the bell rings, you will be considered late.** Open your science notebook to any homework that is due, or to notes from the previous day.
2. The first time you are late for class, you will receive a warning. Any successive infractions will result in a detention. **NOTE: You may not have time to go to your locker between each class. You will have to figure out an appropriate schedule so that you make it to each class on time.**
3. **<u>You must bring your science notebook*, calculator, and a pen and pencil to class everyday.</u>**

Notice that #3 above is in bold print and underlined. You need to have these things everyday-no exceptions!

4. If your pencil needs to be sharpened, please take care of that **before** the bell. You may not sharpen a pencil while I am lecturing, doing a demonstration, or you are taking a test or quiz.
5. *Your notebook should include all notes, labs, quizzes, tests, and homework as well as plenty of white-lined paper. These notebooks will be checked randomly. The school will not supply you with white-lined paper.
6. Homework may or may not be collected, but will be checked regularly. You will have a chance at the beginning of each class to ask any questions you have on the homework. If there are no questions on the homework I will assume everyone was able to complete it with no problems.

"The WRHS Science Department believes that homework is necessary to help our students achieve at the high academic level necessary for college preparation. Schoolwork done outside of class time provides training in study habits, skills and discipline; it reinforces and increases background knowledge and conceptual understanding, and it provides experiences in problem solving and self monitoring. In particular, it provides students with an opportunity for them to take personal responsibility for their own achievement."

7. Homework **every night** is to review the material covered in class that day, and to check my website and your email. I will often post the day's notes on my web site or send you some hints or reminders by email. You will do this in addition to assigned problems, readings, or worksheets. All material from the previous day is "fair-game" for a quick quiz.

8. **Please push in your chairs as you leave, and make sure you have returned all supplies.**
9. If you finish an exam early, you need **to stay in your seat**, turn the paper over. Work on something else until everyone is finished. You will not be allowed to go to the bathroom, get something from other parts of the room, or go to your locker.
10. During lecture or discussion time I will quite often ask the class questions. You must raise your hand and wait to be called on in order to respond. Shouting out an answer does not give other students a chance to think the question through. However, often I will not allow you to raise your hand. I will call on someone to answer and everyone needs to be ready.
11. Never be afraid to ask a question. If you have the question, surely others do as well. If I use a word you do not know, please ask for a definition.
12. **If you are absent, you must make up all class work and homework**. Your table partner is responsible for taking notes for you when you are absent, and collecting any missed papers. It is not my responsibility to track you down and get you the work. You do, however, need to see me about missed labs and quizzes. **Make sure you get yourself a "homework buddy". When you return from an absence you should already be aware of what you missed and what needs to be done to make that up. DO NOT ask, "What did I miss?" Email me only if you are unsuccessful getting missed work from a classmate.**
13. I will assign all lab groups. Your lab group may change as the year progresses.
14. Extra help or work on projects will be available everyday after or before school in room D115. You need to let me know if you are planning to come, however, since I have faculty, department, and guidance meetings on some days. I will be in my classroom every morning between 7:00 and 7:30. However, I have office hours for the science department faculty between 6:30 and 7:00 and sometimes get a bit tied up. If you come to my room for help in the morning and I am not there, just stay put. I will be there shortly.
15. **There can be no food or beverages in my classroom**, with the exception of mid-morning nutrition break. Please bring a healthy snack to eat during morning announcements at the beginning of 3rd period.
16. **Not only are electronic devices (cell phones and iPods) not allowed to be used in my room, I don't even want to <u>see</u> them**. **If I do see them (even earphones around your neck) I will collect them. School policy dictates that your parents need to come to school to pick them up from the main office.**
17. **Bathroom privileges:** Asking to go to the bathroom during class or lab is EXTREMELY disruptive. Only ask if ABSOLUTELY necessary. No one should be asking on a regular basis. Use passing time or lunchtime to use the facilities.
18. **Any form of cheating will not be tolerated. All students involved will receive a zero and parents as well as administrators will be notified.**
19. **There will never be any reason to write or scratch on any part of the table. Not on the top, not on the side, not on the leg. If you sit in a seat where the table has been damaged in any way, this will be considered destruction of school property, and will be dealt with accordingly. I will check the tables regularly!**
20. You are responsible for your textbook. You will sign out a book and take it home. You can leave it at home so that you do not have to carry it back and forth. There will be times during the year when you will have regular homework from the textbook, and times when you do not. However, we choose this book for its 'readability'. Please read the chapter before, during, and after, our

classroom discussions on each topic. At the end of the school year, you will need to return the same textbook you signed out. Failure to return the book, or returning a damaged book will require reimbursement.

21. I try to find Internet links that help you to learn the Physics material. Sometimes these are interactive sites that simulate the physics as you set parameters. Sometimes they will be little mini lectures. You will be required to check my website and your email everyday.
22. I will send you our class notes as often as possible. These will be in a pdf format and you should have no trouble viewing and/or printing them. However this does not mean that you should not take notes during class. For some of you, the act of writing things down helps you to remember. For others of you, writing everything will be distracting and you will want to take brief notes and then rely on the sent notes. You should review your notes and my notes every night. (See number 7)
23. We will be using 'clickers' in class almost every day. As you enter the room you will pick up your assigned clicker, returning it to the correct slot as you leave the room. You are responsible for your assigned clicker and will be required to pay for the cost of replacement if you damage it in any way. Students in other classes will be using your clicker, so make sure you check it at the beginning of each class, alerting me to any abnormality.
24. My expectation is that you will be respectful of all laboratory equipment, computers, and supplies used in class.