

ADVANCED TOPICS IN SCIENCE
SYLLABUS

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Advanced Topics in Science Web Site: <http://www.plutonium-239.com>

Course Description

This rigorous †senior-level course is designed to meet the needs of those students planning a science-based study in college including such areas as medicine, nursing, engineering, physics, biology, dentistry, or chemistry. The course is divided into two sections, *Organic Chemistry* and *Physics II Electricity & Magnetism*. During part I, students take an intensive look at such topics as organic nomenclature, alkanes, alkenes, alkynes, functional groups, aromatics, polymer chemistry, and organic reactions. This course work is similar to the first semester of a college organic chemistry course. During part II, students will cover electricity, magnetism, and basic circuits. This is similar to the second semester of a college non-calculus physics course. Due to its rigorous nature, students need instructor approval prior to taking this course. It is assumed these students possess a strong mathematical background, work ethic, and logical thinking skills. This course includes a †final for each section (in December and June).

Advanced Topics in Science covers the following concepts (†if time permits):

Organic Chemistry

Structure and Bonding

The Nature of Organic Compounds: Alkanes

The Nature of Organic Reactions: Alkenes

Reactions of Alkenes and Alkynes

Aromatic Compounds

†Stereochemistry

Physics II: Electricity and Magnetism

Electric Fields and Potential

DC Electric Circuits and Components

Magnetism

Electromagnetism

Maxwell's Equations

†Electromagnetic Waves

Required Daily Materials

The following materials are required for each class. You will **not** be permitted to go to your locker once the bell rings.

1. Three-Ring Binder for *Organizing* Notes, Homework, Labs, and Handouts
2. Assignments
3. Scientific Calculator (The TI-89 is highly recommended)
4. Pen or Pencil
5. Covered Textbook

Course Ethics

- A. Disruptions: When you disrupt another student, you are stealing their time and attention from the instruction. You are also not being respectful of the time, sacrifice, and money invested in other students to attend West Shore Christian Academy.
- B. Studying: You are expected to review your notes everyday. It is a 3-step process:
 1. Within the first 24 hours after you are given the notes for the first time, you are expected to identify what you know and what you don't understand. You are to contact me prior to class to identify your areas of need.
 2. As you continue to review these notes within the week, you should continue to "dialogue" with me until the information is clear to you.
 3. Once you have an understanding of the material, you need to continue to frequently review it and other previous notes so it is not forgotten and you can begin to apply that knowledge.
- C. Homework: The work you complete and submit for a grade in this class is to be your own. Copying from other students, online resources, or any other source and submitting it for a grade is cheating.
- D. Quizzes and Tests: The answers that you provide on quizzes and tests are to be solely from the information you have memorized and the skills you have acquired. The use of any non-approved resources (online resources, classmates, previous students, current students, notes, equations, cheat sheets, etc) is cheating.

Classroom Expectations

1. Use good manners.
For example, do not talk when another person is contributing to the lesson, raise your hand and wait quietly until you are given the floor, use appropriate language, etc.
2. Be respectful of others and their belongings.
No touchy-feely
3. Be responsible for yourself.
This includes (1) coming to class on time, (2) being prepared with required daily materials and your homework completed everyday, (3) completing the warm-up assignment in a timely manner, (4) leaving your cellphone in your book bag or locker, (5) keeping food or drink out of the lab, and (6) completing your other class's homework outside of my class.

ANY BEHAVIOR THAT FALLS BELOW THESE EXPECTATIONS WILL NOT BE TOLERATED.

Grading Policy (Subject to Change)

Your grade will be determined by a weighting system. This system is broken down as follows:

<u>Work</u>	<u>Weighting</u>
Warm-Up & Daily Reviews, Quizzes, Summary	20 %
†Homework, Class Work, Review Worksheets	30 %
†Essential Questions	5 %
†Laboratory Activities	15 %
Cumulative *Tests & Projects	30 %

†Late assignments will be reduced 10% for everyday they are late up to a 50% reduction at which time a zero will be issued. *After graded tests are returned for student review, they will be recollected and held to ensure standards are being met with our current and future students. Students are highly encouraged to meet with their teacher afterwards to receive additional help.

Tutoring Hours

Available upon request, times vary due to the schedule

Absence from Class (Subject to change due to COVID-19)

In the event of your absence from class, it is **your responsibility** to check MS Teams to watch the recorded lesson, Renweb for homework information, and the science web site for additional resources.

A. Class Notes:

You are responsible for the information covered on the day(s) of your absence. Assignments may be available for download at www.plutonium-239.com.

B. Handouts (non-FLO):

I will place all handouts in the MISSED WORK bin in my room. It is your responsibility to pick them up on your day of return.

C. Homework & Class Work:

- (1) If homework or class work was collected on the day you were absent, it is due on the day of your return to school. It is your responsibility to place it in the IN bin in my room.
- (2) If homework or class work was assigned on the day you were absent, it must be completed within two (2) days. It is your responsibility to place it in the IN bin within this time frame or a zero will be assigned.

D. Tests and Major Quizzes (Over 5 points):

Upon your return to school, you have two (2) school days to take the make-up test and/or major quiz. After two school days, a zero will assigned for that test and/or major quiz. See me to make arrangements.

E. Labs/Experiments/Demos:

Upon your return to school, the lab/experiment/demo must be completed within four school days. See me to make arrangements.