APSci Syllabus

Genius is talent set on fire by courage.
Henry Van Dyke[1]

We will do our best to light as many fires as possible in this course.

Class Information:

Tutor: Elizabeth Wachtler
cell/text: 909-319-4601 or email: wachtler@twc.com

Term: Fall 2016, Winter/Spring 2017
Prudentia Christian Co-op

What will you do in APSci?

- 15 modules of amazing physical science topics
- an independent scientific research project and experiment
- module tests
- research papers
- lab reports
- weekly homework in your student notebook

Bring to Class each week:

1. textbook: *Exploring Creation with Physical Science, 2nd ed.* Apologia
2. student notebook: *Exploring Creation with Physical Science Student Notebook, 2nd ed.* (spiral)
3. pocket folder to hold reports, handouts and extra papers
4. completed assignments/homework to turn in
5. pen, pencil, eraser, etc.

Other Required Materials:

- 1" binder for scientific research project, mostly kept at home
- science project display board, needed in March and April
- online access to the class website

Class Website

I have an APSci website (http://wachtler.github.io/apologia/) with links, videos, and images directly related to the modules. Some of these are required. **Check this website each week**. Please view the required videos and webpages for each module.

The website also has downloadable copies of the syllabus, calendar, and other class handouts.

Independent Scientific Research Project and Experiment

You will research, plan, and carry out an independent scientific experiment this year. There are 5 components: a background research report, a testable question and experimental plan, executing the science experiment, a final lab report, and a display board with an oral presentation of your work.

Scientific Method Classes:

There will be 4 off-campus Wednesday classes: Sept 21, Oct 19, Jan 18, Feb 15, 10 am – 12 pm. (place to be determined) These classes are not required, but they will be very helpful for planning and executing your independent science experiment. If you can't attend, please ask me about what we covered so you can complete your science experiment correctly. Parents are welcome to attend.

Honor Code

Let us honor God with honesty and integrity in this class. Students please sign the APSci Honor Code page and put it into your science folder.

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[1] Henry Van Dyke. (n.d.). Amer. author, educator, pastor. Retrieved June 12, 2016, from BrainyQuote.com http://www.brainyquote.com/quotes/authors/h/henry_van_dyke.html

Weekly Assignments
Listed on the syllabus calendar and the website under WEEKLY ASSIGNMENTS. Homework includes:

- reading the textbook
- SNB pages (On Your Own questions, charts, diagrams, etc., and Study Guide questions)
- lab reports
- videos to watch and webpages to read (see the class website)
- module tests or research reports
- tasks for your independent scientific research project and experiment

Student Notebooks (SNB)
The more you write in your SNB, the more you will learn in this course. I will grade your SNB for each module so keep your notebook up to date.

1. **On Your Own (OYO) questions:** Answer all "On Your Own" (OYO) questions as you come to them in your reading and check your answer immediately for the best learning. The OYO answers are in your textbook after each module. Also complete all the SNB charts & diagrams.
2. **Study Guide (SG) pages:** Study Guide questions are practically identical to the test questions. I will email the solutions (answers) for the SG to your parents each week when you complete the SG. Check and correct your SG answers before taking the module test.
3. **Lab Report pages:** You will use the SNB to record the first draft of lab reports. I won't grade the lab reports in your SNB.
4. **Optional SNB pages:** Module summaries in the last 1/3 of the SNB are optional study tools. I won't grade these.

Tests
Module tests will be sent home in a test envelope every other week. These are "closed book" tests. Bring completed tests to class the following Monday with a parent signature.

Optional Research Papers
For each module, you may write an optional module research paper instead of completing the module test. In other words, if you write a module research paper, you do not need to take the module test. Choose a topic related to the module that interests you and check with me for approval.
Here are some examples:

- Research rpt. about the Coriolis Effect on a spacecraft launch (Mod. 7)
- Research rpt. about free fall and sky diving (Mod. 9)
- Research rpt. about the possibility of a space elevator (Mod. 11)
- Research rpt. about using radium in wristwatches (Mod. 12)
- Research rpt. about using gamma rays to irradiate food (Mod. 15)

The research paper should be approx. 500-700 words long (5 – 7 paragraphs) and use reputable source materials. I will grade this report and count it as the test grade for that module.

Lab Reports to turn in
Some labs will require a complete, typed lab report that you will turn in to me. I will grade these typed lab reports. You will use your SNB for the first draft of most lab reports. I will not grade the lab reports in the SNB.

Course Requirements & Grading
Here's the grading ratio for PCC APSci:

Material:	% of Class Grade
- Tests/Written Research Reports (15)	25%
- Typed Lab Reports (~8)	20%
- SNB (OYO, charts, etc. and Study Guides) (15)	20%
- Class discussion/cooperation in class labs	10%
- Independent Science Experiment (research report, experiment plan, final lab report, and board/presentation)	25%

Grading scale:	
98 – 100%	A+
93 – 97%	A
90 – 92%	A-
87 – 89%	B+
83 – 86%	B
80 – 82%	B-
77 – 79%	C+
73 – 76%	C
70 – 72%	C-
67 – 69%	D+
63 – 66%	D
60 – 62%	D-
59 or below	F

Extra Credit
Students may do additional research or lab reports for extra credit. Or, an extra research report or lab report can be substituted for a low assignment grade. I will delete the low score and put in the higher score from the extra credit assignment.

Class Days
Before class begins, please put all assignments in the APSci class homework basket.

If printing your report(s) is not possible, you may email me a finished research report or lab report at least 2 hours before PCC begins on Monday morning. Late homework will be marked down.

At the beginning of class, we will discuss the module. If you have anything you are uncertain about, please bring it up at this time. We will try to spend the majority of the class with labs. There is always time to ask questions during lab time as well.

Class Expectations
1. Be eager to learn! Listen attentively and take notes during lecture. You will find that I will prepare you for the module tests in my lectures and class games!
2. While doing experiments, talking about the lab topic is fine; NO chit-chatting about other topics.
3. Clean up your area after the lab. Help put lab materials and other items away.
4. No food in class, please. Water bottles in your backpack, etc. are fine, but not on the desks.

Attendance and Makeup Work
What should you do when you miss class? If you know you are going to miss class, email me. Then check the class website for updates and complete the work for the class you missed. It is important that you catch up on your work right away.

Even if you are absent, you are still responsible for the work on our class syllabus and schedule. All work not turned in by the "due in class" date is subject to a 10pt./week penalty, unless I know about the absence.

Calculators:
You may use a calculator on homework and tests, but you must always show your math work in written form as well. This means completely write out the entire equation with the answer.

Why do I teach Science?
I love science. I love learning something new. I love to understand things.

When I learn something in the realm of science, I feel like I have learned something new about God and the brilliance of His creation. It's an amazing, head-expanding, humbling experience - a gift from God Himself - when I understand His creation even a little bit more.

Acts 17:10 tells us the Bereans "*received the Word with all readiness of mind, and searched the Scriptures daily, whether those things were so.*" Like them, we can test all that we learn to make sure that it is God-honoring and consistent with God's design.

And in those beautiful moments when it all fits together and expands our understanding of our Creator, it's an awesome feeling. Praise God!

♥ Mrs. Wachtler

Looking forward to a wonderful year at PCC with all of you.