Physics 100-07 (Elements of Physical Science)

COURSE AND INSTRUCTOR INFORMATION:

Section: 07
Meeting Time: Tues & Thurs. 2 – 3:15 PM
Location: Merion 190
Instructor: Dr. Albert Koenig
Office Location: Schmucker Science South, 4th Flr. by Dr. Chyba's office
Office Telephone: 610-436-6992
Email: akoenig@wcupa.edu
Office Hours: Tues.: 9:00 am – 10:30 am; 3:30 – 5 pm
               Or, Thurs.: 4:15 – 5 pm

COURSE DESCRIPTION

PHY100 Elements of Physical Science is intended as an introductory physics course for non-science majors seeking to fulfill science credits. As such, the course was developed around the exposition of physics principles through real world applications, such as the automobile, the airplane and space. The applications are arranged into modules or "APP-PODS", which form the basis for each of the 14 lectures.

EXPECTATIONS

From the start, students will be divided into groups to perform research on a particular topic and to present their findings collectively before their peers. Following the conclusion of a particular "APP-POD", the student group assigned this topic will present their findings in a 15-20 minute PowerPoint presentation two weeks later.

REQUIRED COURSE MATERIALS

- PHY 100 Elements of Physical Science by Dr. Albert Koenig (available exclusively in the SSI bookstore)
- Calculator and a USB-Thumb drive

SPECIFIC COURSE OBJECTIVES

Goals are:
- To develop an understanding of how physics has impacted the technology that we take for granted today
- To comprehend the fundamental physical principles that underlie real-world applications
- To "look over the shoulder" of a physicist to see how physicists approach solving practical problems.
- To gain a level of confidence that develops from classroom participation and presentation of research on a particular assigned topic.

Physics 100-07 (Elements of Physical Science)

CONTACT POLICY

Please include **PHY100 and our meeting time** in the subject line of any e-mail. I will try to respond to an e-mail by the end of the next business day.

ASSESSMENT

The grade assessment of your work will be based on the following:

- Group Research & Presentation……… 40%
- Exam 1 ……………………………… 30%
- Exam 2 ……………………………… 30%

STUDENT GROUP RESEARCH ASSIGNMENT & PRESENTATION

The discussion below addresses the format for student group research assignment and presentation.

i. Assignments:

There are **9** topic assignments (APP-PODS) for student group research, PowerPoint development and presentation. A group is responsible for only ONE (or at most two short) topic(s). The instructor will ask for 9 volunteer group leaders, whose job it is to select team members, build the team and coordinate activities, i.e. schedule meetings and/or e-collaboration to investigate the research topic assigned to the group. Each member of the group MUST contribute something to the overall research and presentation material. The presentation is due on the assigned date listed in the SCHEDULE (two weeks following the concluding lecture on the assigned topic). Each member of the group must be present during their group presentation, which is to last 15-20 minutes. Peer review (Q/A) and Instructor evaluation will be blended to form a group grade. The assignment of an APP-POD topic to a particular group is selected either voluntarily by the group leader, or assigned by the instructor.

ii. Research:

At the conclusion of a particular APP-POD, there are "Research Challenges" identified, which can serve as the basis for the group's research. These are typically references used in the development of the material, along with specific questions that illuminate the topic. In addition, in some cases, there are "Exercises" that are listed which make use of a particular applet (available on D2L) developed by your instructor to challenge the group.

iii. Student Group Presentation:

The group leader's role is to coordinate the assignment of research and presentation materials amongst the group, so that there is coherence in the exposition of the topic. The presentation format is to be PowerPoint slides sufficient to adequately cover the investigation and summarize the findings within a time span of 15-20 minutes. Each member of the group shall be present during the exposition and answer any questions that develop from the class. The instructor is looking for organization, meaningful research, and brevity.

Physics 100-07 (Elements of Physical Science)

ATTENDANCE POLICY

You must strive to be on-time for the beginning of class to avoid having to repeat critical information and wasting precious class time. Even though the workbook contains the instructor's presentation materials, from time to time, additional information and examples will be presented. It has been shown that those who attend the lectures regularly do much better in the exams. With that said, I am mindful of traffic congestion around rush hour and other extenuating circumstances that may warrant excuse for being late. Do your best to be on-time.

WEATHER POLICY

Should the university close due to weather during a class period, the class will be continued the following week.

E-MAIL POLICY STATEMENT

It is expected that faculty, staff, and students activate and maintain regular access to University provided e-mail accounts. Official university communications, including those from your instructor, will be sent through your university e-mail account. You are responsible for accessing that mail to be sure to obtain official University communications. Failure to access will not exempt individuals from the responsibilities associated with this course.

ELECTRONIC DEVICES POLICY

In order to create an environment conducive to learning, please arrange for all electronic devices to be set in silent/vibrate mode and put away. If you need to use a device to accommodate a disability, please see below. Please observe that students may not **text or use their cell phones** during the class, unless it's an emergency.

DISABILITY STATEMENT

If you have a disability that requires special accommodations under the Americans with Disabilities Act (ADA), please present your letter of accommodation and meet with me as soon as possible so that I can support your success in an informed manner. Also, contact the Office of Services for Students with Disabilities (OSSD) at (610) 436-2564, their email address is ossd@wcupa.edu, and their website is www.wcupa.edu/ussss/ossd. Sufficient notice is needed in order to make the accommodations possible. Both the WCU and I desire to comply with the ADA of 1990.

CLASS SCHEDULE

Week #		Lecture Topic
1	Jan 19, 21	Introduction, Groupings, 1. Measurement
2	Jan 26, 28	2. Das Auto (student .ppt Wk 4)
3	Feb 2, 4	3. I'm Flying (student .ppt Wk 5)
4	Feb 9, 11	4. American Sniper (student .ppt Wk 6)

Physics 100-07 (Elements of Physical Science)

5	Feb 16, 18	5. Rocket Man (student .ppt Wk 7)
6	Feb 23, 25	6. Orbit & Space; 7. Beyond (student .ppt Wk 9)
7	Mar 1, 3	EXAM 1
8	Mar 8, 10	**SPRING BREAK**
9	Mar 15, 17	8. Fields (student .ppt Wk 11)
10	Mar 22, 24	9. The Electronic Evolution (student .ppt Wk 12)
11	Mar 29, 31	10. The Grid (student .ppt Wk 13)
12	Apr 5, 7	11. Work It!; 12. Thermal Signature (student .ppt Wk 14)
13	Apr 12, 14	13. Quantum Reality
14	Apr 19, 21	14. It's About Time!
15	Apr 26, 28	EXAM 2

ACADEMIC INTEGRITY & CONDUCT

I have a zero tolerance policy for breaches of academic integrity. Breaches of academic integrity will be investigated and sanctions imposed to the full extent available under University policy. For questions regarding the university Academic Dishonesty, the No-Grade Policy, Sexual Harassment, or the Student Code of Conduct, students are encouraged to refer to their major department's handbook, the Undergraduate Course Catalogue, the Rams Eye View, or the University Web Site. Please understand that improper conduct in any of these areas will not be tolerated and may result in immediate ejection from the class.

UNIVERSITY SANCTIONED EVENTS

If you are participating in a University sanctioned event during one of the labs you must notify me in advance. You must provide some form of documentation. For details please see the discussion of University Sanctioned Events in the WCU undergraduate catalog.

PUBLIC SAFETY

The Emergency Communications Committee recommends that the number of WCU's Department of public safety be available on every course syllabi. WCU Department of Public Safety: **(610) 436-3311**.