Physics 116 (Engineering Graphics)

COURSE AND INSTRUCTOR INFORMATION:

Section: 01
Meeting Time: Tuesday 6:00 pm – 7:55 pm
Location: Anderson 1 (alt. Merion 109)
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: Tuesday: 8:00 pm – 8:45 pm
            or by appointment

COURSE DESCRIPTION

PHY116 Eng. Graphics is a continuation of PHY115 practicum covering the development of engineering graphical skills based on the use of SolidWorks software accessed from the WCU computer terminals. PHY116 picks up with Exercise 4.3 (threads) and extends to the end of the workbook, covering the chapters on analysis and animation and 3D printing. The course will conclude with an approved student project. All work is to be saved to the student's personal account.

EXPECTATIONS

You have two hours to work through the assigned activity. You are asked to read the particular exercise ahead of time so that you come into the class prepared. A hardcopy of your work shall be turned-in to the instructor at the conclusion of each class, unless the assignment is for a longer duration.

REQUIRED COURSE MATERIALS

- Engineering & Computer Graphics Workbook Using SolidWorks 2014 (sold at WCU bookstore)
- Calculator and a USB-Thumb drive

SPECIFIC PRACTICUM OBJECTIVES

Goals are:
- To get a hands-on experience with engineering sketching tools
    - To learn the proper techniques for efficient sketching, including selection of views, dimensioning, manipulating and creating a 3D object.
    - To develop an ease with finding tool bars, extruding an object and changing its features.
    - To render a complete 3D object that is accurate and properly depicts the design intent of its creator.
    - To become familiar with the use of analysis tools (mechanical and thermal).
    - To render SolidWorks files with animation and 3D printing capability.

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- To gain valuable engineering skills that can be carried over to the work world.

CONTACT POLICY

Please include **PHY116 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:

- SolidWorks Exercises ………… 30%
- Instructor Design Challenges …… 20%
- Student Project ………………… 50%

ASSIGNMENTS, EXERCISES & STUDENT PROJECT

The discussion below addresses the format for the submission of assignments, exercises and student project.

i. Exercises:

Under SolidWorks activities, the submission of the Exercises will count a total of 30% of the grade. This insures that students are progressing through the Workbook and learning proper graphical techniques along the way. Each submission will be on a student created Project Sheet properly identifying that particular exercise.

ii. Design Challenges:

The instructor will present design challenges after the completion of each of the chapters. This is to test the student's understanding of the material, as well as to see how the student will address a particular design challenge. Two weeks will be allowed for the submission of the project. The design challenges will count 20% of the grade. Each submission will be submitted using the student's Project Sheet.

iii. Student Project:

Upon approval, the instructor will allow the student the freedom to take-on his/her particular design challenge using SolidWorks software. The project is intended as a capstone design project for the academic year. As such, the submission will count 50% of the grade. Students must submit their project design challenge to the instructor by Wk. 11 for approval by the Instructor. The final submission is scheduled for Wk. 15.

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. 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.

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WEATHER POLICY

Should the university close due to weather during a class period, the class will be continued the following week. Students can always access SolidWorks software remotely from RAMcloud.wcupa.edu.

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.

LAB SCHEDULE

Week #		Laboratory Experiment
1	Jan 19	Introduction & Returns
2	Jan 26	Screw Thread & Nut Design
3	Feb 2	Assembly
4	Feb 9	Assembly Design Challenge
5	Feb 16	Animation
6	Feb 23	Animation Design Challenge
7	Mar 1	3D Printing

Physics 140 Lab (General Physics II Laboratory)

8	Mar 8	**SPRING BREAK**
9	Mar 15	SolidWorks Mechanical Analysis
10	Mar 22	SolidWorks Thermal Analysis
11	Mar 29	Student Project
12	Apr 5	Student Project
13	Apr 12	Student Project
14	Apr 19	Student Project
15	Apr 26	**Student Project Submission**

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**.