

# PHY 115: “Engineering Graphics 1”

Fall 2012

Tuesdays 6-8 PM in MER 109 (or AND 1)

**Course description:** This is an introductory course that focuses on engineering drawing, a necessary skill for communicating design ideas. We will start of learning the basics of hand-sketching in the first half of the semester, then move on to 3D computer aided design (CAD). For the latter, we’ll use the software package Solidworks. To a lesser degree, we will talk about the practical side of engineering drawing and touch on engineering design in general, e.g., the design process, manufacturing methods, and material selection.

**Instructor: Dr. Robert Thornton**

Office: Merion 129

Office Phone: 610-436-2614

E-mail: rthornton@wcupa.edu

Office hours: M, Tu, W 1:00-2:00 pm; Thurs. 3:00 – 5:00 pm; also by appointment

**Textbooks (required):**

*Engineering Graphics Essentials* by K. Plantenberg, (4<sup>th</sup> ed), SDC publications (textbook should be NEW).

*Commands Guide Tutorial for Solidworks 2012* by Planchard & Planchard, SDC publications (used copy is ok).

**Other Required supplies (to be brought to every class):**

- Blank engineering (gridded) paper, pencil, eraser, and ruler.
- A removable media storage device, such as a USB flash drive

**Web page/Syllabus:** Many of the necessary course documents (syllabus, homework assignments, solutions, etc.) will be posted on D2L.

**Grading:**

Exam 1: 20%; Exam 2: 20%

Homework: 20%

Design Project: 20%

Final Exam: 20%

**Attendance:** Since the course only meets once a week, attendance is crucial. Attendance will be taken at each lecture. If you are not there for the *entire* lecture, you will be marked absent. One unexcused absence is allowed. After you miss more than one with no excuse, each additional unexcused absence will result in your course grade going down 1/3 of a letter grade (e.g., B to B-). If you have good reason to miss class, your absence will be considered an excused absence and will not lower your grade. Excused absences are limited to those due to participation in university sanction events (see policy in the WCU undergraduate catalog) or those accompanied by written confirmation from a doctor, the Dean of Students, etc. An unexcused absence on the day of a quiz or exam will result of a grade of zero for that quiz or exam. Finally, whether your absence is excused or unexcused (or if you are late to class), you will be responsible for any material covered and any announcements that were made in class that day.

**Homework:** There will approximately 10 homework assignments throughout the semester. Homework assignments are due at the beginning of class (6:00 pm) on the specified due date. Assignments may consist of detailed hand sketches, computer exercises, or a design topic. Because of the unique structure of this class, no late assignments will be accepted unless you have already made a prior arrangement with me.

**Course Coverage** (\*\*might be revised as the semester progresses):

Week1: Introduction, Syllabus, Orthographic projection & multi-views

Week 2: Orthographic projection (cont'd)

Week 3: Dimensioning

Week 4: Drawings

Week 5: Quiz 1

Week 6: Introduction to Solidworks – basic part modeling

Week 7: Patterns

Week 8: Assemblies in SW

Week 9: Drawings in Solidworks

Week 10: Quiz 2

Week 11: Advanced features: sweep, spring

Week 12-15: Class project: Reverse engineering

**Disability:** West Chester University is committed to making accommodations for persons with disabilities. Please make your needs known by contacting your instructor and the Office of Students with Disabilities. Sufficient notice is needed in order to make the accommodations possible. The University desires to comply with the ADA of 1990.

**Other Policy:** For questions regarding 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.