EGR110: Computational Methods (1 unit) Fall 2015

Instructor: Dr. Paul D. Schmelzenbach	Meeting: 1:30-3:30 TR ()
e-mail: PaulSchmelzenbach@pointloma.edu	Office Phone: 849-2933
Office Hours: R 9:00-11:00; 12:30-1:30 MWF	Office Location: RS 207

Materials – Excel or similar spreadsheet program (such as LibreOffice Calc), access to a laptop.

Description – This course will provide an introduction to computational techniques used in physics and engineering with an emphasis on effectively using spreadsheet. We will also explore some ways to begin thinking about approaching complex problems and answering difficult questions.

Learning Outcomes – This course supports the overall learning objectives of the physics and engineering programs to: apply physical principles, mathematical reasoning, and computational techniques to solve real-world problems and effectively communicate complicated technical information .

Within these broader outcomes, in this course you will

1. develop spreadsheets that clearly present information, and that can easily be understood and modified by others.
2. have memorized some highly used keyboard shortcuts
3. modify or correct existing spreadsheets to function correctly or in a new way
4. utilize appropriate formulas, functions, charts to generate or utilize external data to address engineering problems
5. develop and implement models with adjustable parameters
6. apply a new function (not explained in class) to solve an appropriate problem
7. explain what types of engineering or physics problems might be solved using spreadsheets

.

Projects Through the course you will be completing 6 spreadsheet projects. Projects are a major component of this course and are worth 50% of your total grade.

Collaboration: I would encourage some collaboration between you and your peers while working on tasks and projects, but your work must be your own. The guideline is: you should never have any trouble explaining your work.

Late Submission Policy: Late submissions of projects will receive a 10% reduction in grade for each 24 hour period it is late (not counting weekends). This is a significant part of your grade, so turn things in on time!

Tests – Two tests will be given during this quad. Tests consist of written problems and applications of your knowledge using a spreadsheet program to perform certain tasks or solve certain problems. No make-ups will be given unless prior arrangements have been made. These two examinations are worth 30% of your final grade.

Talks – Two talks will be given during this quad. The first talk will be a 2-minute presentation of the analysis of a particular job within the field of physics or engineering. This talk will be worth 5% of the overall grade. The second talk will be given within the framework of a team, and be worth 10% of the overall grade.

Vocational Exploration– Within this course you will do some initial exploration into the ideas of vocation. Some of these ideas will be incorporated into an assignment that will be submitted in the course.

Final Grades – The grade you earn in this course is based on the scale shown to the right. The points you receive during the course are weighted accordingly:

Projects (6): 50%

Exams (2): 30%

Talks (2): 15%

Vocational exploration: 5%

A	100 - 91.0
A-	91.0 - 89.5
B+	89.5 - 87.0
B	87.0 - 81.0
B-	81.0 - 79.5
C+	79.5 - 77.0
C	77.0 - 71.0
C-	71.0 - 69.5
D+	69.5 - 67.0
D	67.0 - 61.0
D-	61.0 - 55.0

Academic Integrity – All students are expected to uphold the highest standards of honesty and integrity in their academic work. Cheating or plagiarism may result at a minimum in failure on the assignment and may result in an automatic failure in this course.

Academic Accommodations – While all students are expected to meet the minimum academic standards for completion of this course as established by the instructor, students with disabilities may require academic accommodations. At Point Loma Nazarene University, students requesting academic accommodations must file documentation with the Disability Resource Center (DRC), located in the Bond Academic Center. Once the student files documentation, the Disability Resource Center will contact the student's instructors and provide written recommendations for reasonable and appropriate accommodations to meet the individual learning needs of the student. This policy assists the University in its commitment to full compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities (ADA) Act of 1990, and ADA Amendments Act of 2008, all of which prohibit discrimination against students with disabilities and guarantees all qualified students equal access to and benefits of PLNU programs and activities.

FERPA Policy As a student at Point Loma, you have a legal right to privacy as outlined in the federal FERPA (Family Educational Rights and Privacy Act) legislation. See Policy Statements for full text.