CHBE250: COMPUTER METHODS IN CHEMICAL ENGINEERING, Fall 2013

Instructor:

Dr. Panos Dimitrakopoulos

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Office hours: Mondays 2:00-3:00pm and Wednesdays 1:00-2:00pm

Course web: ELMS Enterprise Learning Management System

Class: MWF: 11:00-11:50am (JMP 3201); Friday noon-12:50pm (CSS 2324) Discussion

Teaching Assistants:

Xiaohong Zhuang	xiaohongzhng@yahoo.com	Office hours: Tue and Wed: 4-5pm
Brandon Hurn	bhurn@terpmail.umd.edu	Office hours: Thur: 11am-noon
Katherine Pohida	katherine.pohida@gmail.com	Office hours: Thur: 1-2pm

Office: Room 1124 (TA office), Chemical & Nuclear Engineering Bldg

Course Description:

This course introduces undergraduate students of chemical and biomolecular engineering to those areas of computer methods which are currently most important in the engineering science as well as in their subsequent courses. In particular, the course includes the following topics from Numerical Analysis (the chapters' numbers are from Chapra):

(a) Introduction to Serial and Parallel Computing (Ch. 1, 4)
(b) MATLAB: introduction and basic programming (Ch. 2, 3)
(c) Root Finding (Ch. 5-7)
(d) Solution of Linear Systems of Equations (Ch. 8-12)
(e) Approximation and Interpolation (Ch. 14-18)
(f) Numerical Integration and Differentiation (Ch. 19-21)
(g) Initial and Boundary Value Problems (Ch. 22-24)
(h) Review of CHEMCAD

All material taught during the semester is accompanied and explained via MATLAB.

Recommended Textbook:

Applied Numerical Methods with MATLAB for Engineers and Scientists, by Steven C. Chapra, McGraw-Hill Higher Education, 3rd Edition (2011).

This book is on reserve in the Engineering Library. Note that the library has also an array of books with similar titles; all of them may be used for further study.

Grading Policy:

Homework and Class Participation	30 %	(Teams of two members)
Mid-term exam	30 %	
Final exam	40 %	

Homework Assignments:

Team-homework problems (to be solved by hand and by software) will be assigned on a regular basis.

The homework must be submitted at the beginning of the class the date it is due.

The homework problems will be posted on the course web page while their solution will be presented in the Friday Discussion sessions.

Team homework: 2 students - only one solution per team.

Examinations:

All exams are "closed-books"/"closed-notes" (notes on 1, 2 sheet of paper allowed).

The mid-term exam will be one class period in length.

Date for mid-term exam (subject to change): Wednesday October 30, 2013.

Final Exam: the date is set by the University (Wednesday December 18, 2013, 8:00-10:00 am).

Academic Honesty:

Plagiarism and academic dishonesty will not be tolerated, and suspected incidence will be referred to the Student Honor Council of the Judiciary Programs. For more information see:

http://www.testudo.umd.edu/soc/dishonesty.html & http://www.studenthonorcouncil.umd.edu

The following passage is suggested by the Student Honor Council.

The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit http://www.studenthonorcouncil.umd.edu.