ENCH250: COMPUTER METHODS IN CHEMICAL ENGINEERING, Spring 2005

Instructor:

Dr. Panos Dimitrakopoulos

Office: Room 1227B, Chemical & Nuclear Engineering Bldg

Phone: (301) 405-8166, Email: dimitrak@eng.umd.edu

Office hours: Mondays and Wednesdays: 3:00-4:00 pm (or by appointment: dimitrak@eng.umd.edu)

Course web: Blackboard Learning System (http://umd.blackboard.com/)

Teaching Assistant:

Rama Sreenivasan

Office: Room 2158, AV Williams

Phone: (301) 405-6587, also (301) 405-7250 in his lab in J.M. Patterson

Email: rama@umd.edu

Office hours: Tuesdays and Thursdays: 4:00-5:00 pm (or by appointment: rama@umd.edu).

Course Description:

This course introduces undergraduate students of chemical 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 Bhat & Chakraverty):

(a) Introduction to Serial and Parallel Computing (Ch. 1)
(b) Review of CHEMCAD
(c) MATLAB: introduction and basic programming
(d) Root Finding (Ch. 2)
(e) Solution of Linear Systems of Equations (Ch. 3)
(f) Approximation and Interpolation (Ch. 4)
(g) Numerical Integration (Ch. 5)

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

Recommended Text:

Numerical Analysis in Engineering, by R. B. Bhat & S. Chakraverty, Alpha Science International (2004).

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 %
Mid-term exams	$2 \times 20 = 40$ %
Final exam	30 %

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 problems and the solutions will be posted on the course web page.

Examinations:

All exams are "open-books"/"open-notes".

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

Dates for "mid-term" exams (subject to change): Wednesday March 9 and Friday April 29, 2005.

Final Exam: the date is set by the University (Saturday May 14, 2005, 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