Fall Quarter, 2008

UCI Catalogue Data:  
CBEMS 230 Applied Engineering Mathematics I (4). Analytical techniques applied to engineering problems in transport phenomena, process dynamics and control, and thermodynamics. Prerequisites: CBEMS 110, CBEMS 120A, and CBEMS 120B; or consent of instructor. Same as BME230A.

Course Schedule:  
(Tu, Th) 9:00 – 10:50 AM in DBH 1429

Web Page:  
https://eee.uci.edu/08f/15320/

Instructor:  
Professor Ali Mohraz  
744F Engineering Tower  
Email: mohraz@uci.edu  
Office phone: 824-2028

Office Hours:  
Wednesday, 3:00 – 4:00 PM in 902 Engineering Tower, or by appointment

Course Description:  
Course topics include mathematical modeling of transport phenomena, review of differential equations, systems of ordinary differential equations, Sturm-Liouville and boundary value problems, Fourier series and eigenfunction expansion, separation of variables, regular perturbation, combination of variables, and applied chemical engineering problems.

Textbook:  
Applied Mathematical Methods for Chemical Engineers, 2nd edition, by Norman W. Loney. Additional supplemental materials will be provided during lectures and via the course website.

Other References:  
Advanced Engineering Mathematics by E. Kreyszig  
Advanced Engineering Mathematics by C.R. Wylie and L.C. Barret  
Fourier Series and Boundary Value Problems by J.W. Brown and R. Churchill

Prerequisites:  
A basic understanding of the following is necessary for this course:  
• Calculus and differential operations.  
• Field equations and boundary conditions.  
• Ordinary differential equations.

Grading Criteria:  
Midterm…………………………………………………………………………35%  
Final………………………………………………………………………………50%  
Homework………………………………………………………………………15%

Academic Honesty:  
The complete policy statement on academic honesty is available at:  
http://www.editor.uci.edu/catalogue/appx/appx.2.htm  
There is also a link to this policy on the course website. You are strongly encouraged to read through this policy, which will be strictly enforced. Any occurrence of academic dishonesty will result in no credit for the assignment or exam in question.  
In this class, student discussions regarding the lecture topics are allowed. However, the homework submitted for grading must be the student’s individual work.  
The instructor does not tolerate ANY acts of academic dishonesty.
Exams: There will be a 90-minute midterm exam tentatively scheduled for the week of November 3-7, and a 2-hour final exam on December 11 at 8:00 AM. Both exams will be close-book, but you will be allowed to use your lecture notes. Cellphones, text-messaging and other communication devices, and laptops are not allowed in the classroom during the exams. If extraordinary circumstances require that you use these devices, prior approval of the instructor must be obtained.

Homework: Homework sets will generally be given out on Thursdays, and will be due a week later. General discussions regarding the homework problems are allowed only before you start working out the solution on paper. Direct collaboration, copying, or accessing any printed solution manuals are considered violations of academic honesty, and will be treated as such.

Homework solutions must be written out neatly so that they are easy to follow. The instructor reserves the right to assign a grade of zero to a homework that is difficult to follow. All steps in the solution must be included in the write-up for full credit to be received. It is highly recommended that all final answers be boxed. All disputes over grading of homework or exams must be referred to the instructor within 7 days after materials are returned. Homework that is submitted late will be docked 15% of the maximum points for each day the assignment is late.