Syllabus for Math 20D, Lecture D

General Information
Textbook: *Elemetary Differential Equations, 10th edition*, by William E. Boyce and Richard C. DiPrima

Meeting Times:
MWF 4:00p-4:50p in Ledden Auditorium

Instructor: Chris Tiee (ctiee@ccom.ucsd.edu)

Office Hours:
Thurs 4-6
Fri 11:30-1:30
By Appointment

TAs:
Ashley Chen (jic102@ucsd.edu)
Kuangyi Yang (kuy006@ucsd.edu)

MATLAB:
There is a separately run section with its own assignments; check http://www.math.ucsd.edu/~math20d . You turn the assignments in at a dropbox in the basement level of AP&M. Do not turn in your regular homeworks there. The head MATLAB TA is Jay Cummings (jjcummings@ucsd.edu). Note that you *do not* need to attend the LAB section which appears when you enroll, EXCEPT 10th week, where a MATLAB Quiz will be administered (for 5% of your grade).

Matlab Tutoring:
Help in MATLAB is available in AP&M B432. See http://www.math.ucsd.edu/resources/calculus-tutoring/ for tutor availability.

Section Times:
Go to discussion section in order to ask questions and get more practice on homework. They are held Tuesdays in WLH 2112, with your TAs:

D01 Tu 4:00p-4:50p (Ashley Chen)
D02 Tu 5:00p-5:50p (Ashley Chen)
D03 Tu 6:00p-6:50p (Kuangyi Yang)
D04 Tu 7:00p-7:50p (Kuangyi Yang)
D05 Tu 8:00p-8:50p (Kuangyi Yang)
D06 Tu 9:00p-9:50p (Kuangyi Yang)

Exams
Notes:
There will be two midterms and a final. To the midterms, you are allowed one double-sided

sheet of notes (8.5 x 11 “US Letter” paper). For the final, you can have *two* double-sided sheets of notes. In my own experience, the very act of making a sheet of notes is excellent preparation for the exams, so please don’t skip that task.

Dates:
Midterm #1: Friday, 10/23 (in class)
Midterm #2: Friday, 11/20 (in class)
Final: Tuesday, 12/08, at 3pm (different building: check WebReg).

If you have a conflict and cannot make one of the midterms, please let me know well in advance and send another reminder a week in advance. If you cannot make the final, you should not enroll in this class. However, students with disabilities can make arrangements with the Office of Students with Disabilities (OSD) and the Math Front Desk (7th floor).

Homework:
Homework will be worth 10% of the grade, and mostly graded on completeness. The main motivation for it is for practice for the exams; exams are based on the homework. They will all be physical written homeworks; there is no electronic component (so if you hear about Wiley-PLUS as used by other 20D sections, don’t pay any attention to that). It will be turned in **in class on Wednesdays**. Please **write down which discussion section you’re enrolled in, so we can return it to you in the right section.** It makes also makes it easier for the grader to sort out.

Grading:
Homework: 10%
MATLAB: 5%
MATLAB Quiz: 5%
Midterm 1: 20%
Midterm 2: 20%
Final: 40%

Grading will be *based on* the following scale; we may adjust it to make it more lenient (“curving” as it is known in modern student parlance), if necessary. We’ll *try* to make tests that will give reasonable averages to make it unnecessary:

A+	A	A-	B+	B	B-	C+	C	C-
97	93	90	87	83	80	77	73	70

Approximate Lecture Schedule
Generally, we try to make it through one section of the book per lecture. Some sections will require two lectures:

Date	Sections	Topics
Fri 9/25	1.1-1.2	Math modeling with DEs, Simple Examples
Mon 9/28	1.3	Classification of Differential Equations
Wed 9/30	2.1	Linear equations and Integrating Factors
Fri 10/2	2.2	Separable Equations
Mon 10/5	2.3-2.4	Modeling with 1st order equations. Why nonlinearity is hard.
Wed 10/7	2.5	Autonomous Equations, Population Dynamics
Fri 10/9	2.6	Exact Equations, More Integrating Factors
Mon 10/12	3.1	Second Order Equations, Fundamental Solutions
Wed 10/14	3.2	Linear Independence, the Wronskian
Fri 10/16	3.3	Complex Roots of the Characteristic Equation
Mon 10/19	3.4	Repeated Roots, Reduction of Order
Wed 10/21	3.5	Nonhomogeneous Equations, or review, as time permits
Fri 10/23	Up to 3.4	**Midterm 1**
Mon 10/26	3.5-3.6	Undetermined Coefficients, Variation of Parameters
Wed 10/28	7.1-7.2	Systems of First Order Equations, a little bit of Linear Algebra
Fri 10/30	7.3	Linear Algebra, Eigenstuff
Mon 11/2	7.4	Systems of First Order Equations: Theory

Wed 11/4	7.5	Constant-Coefficient Homogeneous Linear Systems
Fri 11/6	7.6	The Complex Case
Mon 11/9	7.7-7.8	Fundamental Matrices and Repeated Eigenvalues
Wed 11/11		**Veterans' Day: NO CLASS**
Fri 11/13	7.9	Nonhomogeneous Linear Systems
Mon 11/16	5.1	Power Series and their applications in ODEs
Wed 11/18	5.2	Series solutions. Review
Fri 11/20	3.5-3.6, 7.1-7.9	**Midterm 2**
Mon 11/23	5.3	Series solutions
Wed 11/25	6.1	Laplace Transform
Fri 11/27		**Thanksgiving: NO CLASS**
Mon 11/30	6.2	Solution of IVPs via the LT
Wed 12/2	6.3-6.4	Differential Equations with Discontinuous Forcing Functions, and my coffee consumption
Thurs 12/3		**MATLAB Quiz**
Fri 12/4	6.5	Impulse Functions
Weekend1 2/5-12/6		**Review Session**
Tue 12/8		**Final Exam,** 3:00p-5:59p, location TBA (it will be listed on WebReg, and I'll post here as soon as it is assigned)

Extra office hours around exam times will be scheduled sometime those weeks.