Math 46 - Introduction to Ordinary Differential Equations
Summer 2010
Course Syllabus

Primary Instructor

Instructor	:	Edward Burkard
Office	:	Surge 266
Office Hours	:	Monday, Tuesday, Wednesday, Thursday 5:00-6:00pm, and by appointment
E-mail	:	edwardb@math.ucr.edu
Webpage	:	math.ucr.edu/∼edwardb

Lecture Location : Bourns A125
Lecture Time : Monday, Tuesday, Wednesday, Thursday 11:10-12:30pm

Teaching Assistants

Sections 221 and 223

Teaching Assistant	:	John Quinn
Office	:	Surge 283
Office Hours	:	Thursday 1:00-3:00pm and Friday 3:00-5:00pm in Pierce 2429
E-mail	:	john.quinn@email.ucr.edu

Section 221 - Friday 11:10-1:00pm
Location : ENGR2 141
Section 223 - Friday 1:10-3:00pm
Location : Surge 171

Section 222

Teaching Assistant	:	Adam Navas
Office	:	Surge 281
Office Hours	:	Tuesday 12:30-2:30pm Pierce 2429
E-mail	:	adamnavas@math.ucr.edu

Section 222 - Friday 8:10-10:00am
Location : Surge 171

Section 224

Teaching Assistant	:	Raj Kaur
Office	:	Surge 281
Office Hours	:	Thursday 1:00-3:00pm and Friday 9:00am-11:00am in Pierce 2429
E-mail	:	rkaur006@email.ucr.edu

Section 222 - Friday 11:10-1:00pm
Location : Surge 173

Course Catalog Description : MATH 046 Introduction to Ordinary Differential Equations, 4 units, Lecture, 3 hours; discussion, 1 hour. Prerequisite(s): MATH 009B with a grade of "C-" or better or MATH 09HB with a grade of "C-" or better or equivalent. Introduction to first-order equations, linear second-order equations, and Laplace transforms, with applications to the physical and biological sciences.

General Course Information :

- The "official textbook" for the class is "Elementary Differential Equations" by Trench, however I will be typing up my own lecture notes for the course and posting them online for your use, so if you do not want to buy the vastly overpriced book it is okay. A few books I would suggest are "Elementary Differential Equations and Linear Algebra" by Rabenstein and "Elementary Differential Equations" by Boyce and DiPrima; also, books like the Schaum's outline are really effective for this course. Really any book on elementary differential equations should be fine. The main point is that you get plenty of practice. I will be following the department syllabus for this class, so the content will still be the same. The main topics that we will be covering in this class are:
  (a) First-Order Differential Equations
  (b) Second-Order Differential Equations
  (c) Applications of Differential Equations
  (d) Laplace Transformations
  (e) Systems of First-Order Differential Equations
    and time permitting:
  (f) Series Solutions to Differential Equations
  (g) Numerical Methods
- The homework for each lecture will be included into the lecture notes. Homework will be collected each week during discussion (including the first week). You will be expected to do all homework assigned in the lecture notes, but you will only be required to turn in a part of that which I will tell you every Monday. Each week you will turn in at least 10 problems: three problems will be mandatory (the problems announced on Mondays) and the other seven are of your choice. Make sure that the required three are placed at the front of your homework assignment and that you STAPLE your homework assignment. There will be a total of 5 homework assignments turned in, each worth 40 points.
- There will be a total of 4 quizzes, each during the discussion section. Each quiz will be worth 50 points.
- There will be one optional take-home midterm that will be given out after class, in my office, on Monday August 9, 2010 ONLY (i.e. if you do not claim your midterm on Monday August 9th, you will forfeit your option to take the midterm, unless a legitimate excuse is provided), and will be due on Thursday August 12, 2010. The midterm will be worth 100 points.
- The final for the class will take place from 10:30am - 12:30pm on Saturday August 28, 2010. The exam location will likely be the usual classroom, but if this changes you will be notified. The final will be worth 200 points.
- Cheating in **ANY** form is completely unacceptable and if you are caught cheating you will receive an automatic **F** in the course, you will not be allowed to drop the course, and your case will be forwarded to the student conduct committee.

The grading breakdown is as follows :

Midterm Option			No Midterm Option		
$Homework$	=	10%	$Homework$	=	10%
$Quizzes$	=	30%	$Quizzes$	=	40%
$Midterm$	=	20%	$Midterm$	=	0%
$Final$	=	40%	$Final$	=	50%

and the grade distribution I will be using is the following :

$A+$	A	$B+$	B	$C+$	C	D	F
$[95, \infty)$	$[85, 95)$	$[80, 85)$	$[70, 80)$	$[65, 70)$	$[55, 65)$	$[50, 55)$	$(-\infty, 50)$

The way to read this is to determine what range your overall percent score falls into and look at the grade above it. If you did do the midterm, and your grade with the midterm is lower than your grade without the midterm, you will be given the higher grade (i.e. the one without the midterm), so doing the midterm **WILL NOT** adversely affect your grade. The grading scale will get no more strict than this, in fact it will not change at all as I do not believe in curving grades, however, there is another alternative that I have: I will compare your overall grade with your grade on the final and give you the better of the two, pending that you took the midterm, missed no quizzes (unless you had a good reason), and attended class regularly (i.e. put some effort into the course).

Lastly I wish you good luck for the summer and hope that you relax (after all, it is summer time!) but work hard for the class!