Math 3331 – 18120 (2014 Summer II): Differential Equations *

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Prerequisites

Math 2431 and Math 2433.

Texts

Differential Equations, Second Edition, by J. Polking, A. Boggess and D. Arnold. Prentice Hall, 2006.

Course content

Ordinary differential equations (ODE's) and systems of ODE's. Existence, uniqueness and stability of solutions; first and second order ODE's; applications; the Laplace transform; numerical methods; systems of ODE's; solutions of linear equations with constant coefficients; qualitative results.
The computer software Matlab will be used to compute numerical solutions and represent them graphically.

Schedule

The following is a tentative schedule, that I will update throughout the semester. Generally we will cover two sections per day. Lecture notes are posted section by

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*This course syllabus provides a general plan for the course; deviations may be necessary.

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Table 1: Syllabus

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1 6/2-6/6	§1.1, §2.1–§2.2	§2.3–§2.4	§2.5 & §2.7	§2.8–§2.9	Review §3.1
Week 2 6/9-6/13	§4.1–§4.2 **HW1**	§4.3–§4.4	§4.5–§4.6	Review §4.7 & §5.1	No Class
Week 3 6/16-6/20	**Midterm 1** §5.2 **HW2**	§5.3–§5.4	§6.1–§6.2	§6.3 & §8.1	No Class
Week 4 6/23-6/27	§8.2–§8.3 Review **HW3**	**Midterm 2** §8.4	§8.5 & §9.1	§9.2–§9.3	No Class
Week 5 6/30-7/4	§9.5–§9.6 **HW4**	§9.7 Review	**Midterm 3** §9.8	§Review	No Class
Final Week 7/8		**Final Exam** 11am - 2pm **HW5**			

section on the course homepage. I recommend you print them out or review them before or after lecture, allowing you to focus on the material rather than copying things down.

We will cover sections §1.1, §2.1–§2.5, §2.7–§2.9, §3.1, §4.1–§4.7, §5.1–§5.4, §6.1–§6.3, §8.1–§8.5, §9.1–§9.3, §9.5–§9.8, .

Withdrawal

- *Thursday June 5, 2014*: the last day to drop a course or withdraw without receiving a grade.

- *Friday June 27, 2014*: the last day to drop a course or withdraw with a 'W'.

Academic Honesty

Plagiarism and cheating are serious offenses. The University policies on scholastic dishonesty will be strictly enforced (see Catalog/Student Handbook).

Attendance Policy

A student is considered present only if he/she has arrived on time and remains until the class is dismissed. Coming to class late or leaving early is disruptive and thus discouraged. The instructor may drop a student for excessive absences (see Catalog/Student Handbook). Those who have excellent attendance but are on a grade borderline will get extra consideration at the end of the class.

Cell Phones and Electronic Devices

During class and exam periods, all cell phones and other electronic devices must be turned off and kept in a secure location away from the students immediate view. The use of laptop computers is only permitted if students are using the computers to take notes or for purposes related to the class.

Exam Dates

As given in Table 1, there will be three one-hour in class exams and a cumulative final on the dates

Midterm 1 (§1.1–§4.7)	Monday, June 16
Midterm 2 (§5.1–§8.3)	Tuesday, June 24
Midterm 3 (§8.4–§9.7)	Wednesday, July 2
Final (Cumulative)	Tuesday, July 8, 11am – 2pm

Books and notes will not be allowed on all exams. There will be no make-up exams except in an extreme verifiable emergency. Absence from the final exam will result in a grade of F for the course unless arrangements are made prior to its administration

Grading

There will be a total of 800 points possible for this course. The points are distributed as follows

Three midterm exams	$300 = 100 \times 3$
Final Exam	300
Five Homework Assignments	$200 = 40 \times 5$

Your total accumulated points will determine your grade

90% – 100 %	A
80% – 89 %	B
70% – 79 %	C
60% – 69 %	D
0% – 59%	F

Homeowrk

You may, with impunity, submit up to two assignments up to one class period beyond their due date. Subsequent submissions will incur penalties in increments of 10%. Homework submitted later than one class period beyond its due date will not be accepted without a written excuse. Homework scores can not be changed one week after they have been returned. You must staple your work sheets in the upper left hand corner, and make sure that all information (name, etc.) is provided on every page. Any deviation from these instructions will result in a grade of ZERO.

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<div align="center">Table 2: Homework</div>

	Assigned Exercises (will be collected)		Practice Exercises (will not be collected)	
Homework 1 Due on 6/9	§1.1	1,2,3,4	§1.1	
	§2.1	4,13,19,25	§2.1	2,8,15
	§2.2	3,11,19,33	§2.2	1,9,15,29
	§2.3	3,9,15,19	§2.3	4,8,14,18
	§2.4	2,4,18,36	§2.4	3,6,23
	§2.5	1,5,8,12	§2.5	2,6,10
	§2.7	1,2,9,11	§2.7	4,7,10
	§2.8	1,3,4,5	§2.8	
	§2.9	3,11,28,31	§2.9	2,7,14
	§3.1	5, 8, 13, 16	§3.1	2,6,12
Homework 2 Due on 6/16	§4.1	2,6,22,24	§4.1	4,11,17
	§4.2	2,10,18,25	§4.2	4,12,29
	§4.3	3,4,6,8,9	§4.3	2,5,7
	§4.4	1,4,11,22	§4.4	2,8,14
	§4.5	4,10,18,30	§4.5	1,15,19
	§4.6	2, 8, 10, 13	§4.6	3,7,11
	§4.7	4, 10, 16, 21	§4.7	5, 11, 17
	§5.1	4, 12, 18, 21	§5.1	3, 10, 19
Homework 3 Due on 6/23	§5.2	2, 19, 25, 30	§5.2	3, 20, 24
	§5.3	4, 11, 14, 19	§5.3	3, 10, 18
	§5.4	3, 14, 18, 27	§5.4	4, 15, 24
	§6.1	5, 7, 10, 16	§6.1	4, 8, 13
	§6.2	4, 7, 18, 28	§6.2	3, 9, 19
	§6.3	2, 4, 7, 9	§6.3	3, 6, 8
	§8.1	4, 15, 18, 23	§8.1	7, 16, 20
Homework 4 Due on 6/30	§8.2	4, 14, 19, 21	§8.2	8, 17, 20
	§8.3	1, 6, 7, 9	§8.3	3, 5, 8
	§8.4	10, 13, 16, 21	§8.4	2, 8, 17
	§8.5	2, 7, 12, 23	§8.5	1, 8, 15
	§9.1	4, 16, 21, 25	§9.1	7, 17, 20
	§9.2	4, 14, 23, 49	§9.2	3, 9, 15
	§9.3	8, 14, 17, 21	§9.3	3, 11, 20
Homework 5 Due on 7/8	§9.5	4, 14, 21, 53	§9.5	9, 17, 24
	§9.6	3, 10, 14, 17	§9.6	2, 9, 16
	§9.7	4, 8, 11, 12	§9.7	3, 5, 10
	§9.8	4, 14, 29, 39	§9.8	7, 15, 30