

MATH 306 – INTRODUCTION TO DIFFERENTIAL EQUATIONS, SECTION Y, SPRING SEMESTER 2017

1. GENERAL INFORMATION

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Textbook: C. Edwards, D. Penney, D. Calvis, *Differential Equations, Computing and Modeling*, 3rd custom UB edition. The 3rd custom UB edition consists of chapters 1-8 of the 5th standard edition of the book *Differential Equations and Boundary Value Problems: Computing and Modeling* by the same authors.

Maple: This course is approved for satisfying the “Computer Applications” requirement in the Math Major. It is therefore expected that students receive substantial exposure to computing. This will be accomplished via three homework sets which use a scientific computation software called Maple. Maple is available in UB computer labs, and you can download it for free (for Windows, Mac OSX or Linux) from the UBIT website:

<http://www.buffalo.edu/ubit/service-guides/software/by-title/maple.html>

Calculators and other electronic devices: No calculator is required for this course. Use of calculators and other electronic devices on exams is not permitted. On the homework my recommendation is to do smaller examples by hand using pencil and paper to master the techniques and algorithms, and larger examples using Maple.

2. COURSE DESCRIPTION

Differential Equations a key area of mathematics, with many applications in engineering, physics, economics, etc., as well as other areas of mathematics. Topics covered include existence and uniqueness of solutions, particular and general solutions, phase diagrams and singular points, various methods of solving differential equations, including linear algebraic methods and power series methods.

Detailed information regarding **Learning Outcomes** and can be found on the department sample syllabus, available at

http://copper.math.buffalo.edu/ugs/syllabi/syllabus_mth306.pdf.

There is also a schedule of what will be covered when, which I intend to follow as closely as possible.

2.1. **Prerequisites.** MTH 141 and 142.

3. GRADING

3.1. **Exams.** I plan to have two in-class examinations, at approximately the end of the 4th and 9th weeks. If you miss an exam without an official excuse (such as illness or official university business), then you will be allowed to take a makeup exam, but with an automatic 25% deduction from the grade. If you have an official excuse, it must be documented (e.g., with a doctor’s note, which I will verify). In addition, you must make arrangements before the date of the exam in case

of a foreseeable circumstance (e.g., the state track meet) or as soon as possible in the case of an unforeseeable one. If make up arrangements are not made in a timely fashion you will receive a zero.

3.2. Final Exam. A comprehensive final exam will be given on Tuesday 5/16/2017, from 3:30PM to 6:30PM in Nsc 216 (our usual classroom). All topics covered in the course may be tested on the final, but topics covered after the second midterm will be emphasized. Note that travel plans do not constitute an official university excuse for missing an examination or for obtaining a conflict or makeup examination. Hence, the above note regarding a 25% deduction will be enforced in the event that a student's travel plans conflict with the university's designated final examination period for this course.

3.3. Regular Homework. Homework problems will be assigned each day after class on UBLearns. Regular homework assignments will not be graded. However, most (if not all) quiz and exam problems will be very similar to homework problems. (I might change the numbers and functions; I might not.) Solutions will be posted after the next class.

3.4. Maple Homework. There will be four special homework assignments to be completed using Maple. These will be graded and count towards your course average. Each student's lowest homework score will be dropped before computing the homework average. No late homework will be accepted.

3.5. Quizzes. We will have five quizzes, administered in recitation, over the course of the semester. They will feature problems very similar, if not identical, to homework problems.

3.6. Attendance. Good attendance is required for good performance in courses like this one. If you miss a class, it's **your responsibility** to find out whether any announcements were made, what was covered, etc., and to learn the material that was covered that day on your own. (You can of course come to Office Hours for help.)

3.7. Recitation. Recitation meets once a week. Most weeks, it will be spent going over problems similar to the homework problems and answering your questions. In the weeks when we have a Maple Homework, it will be in the computer lab so you can work on the Maple problems and get help with them and with Maple.

3.8. Grade Assignment. Your Course Average will be computed with the following breakdown:

- Maple Homework 15%,
- Quizzes 30%
- Midterms 30%
- Final 25%

The grade you receive will be the one corresponding to your course average as follows

88-90	B+	92-100	A	90-92	A-
78-80	C+	82-88	B	80-82	B-
68-70	D+	72-78	C	70-72	C-
		60-68	D		
		0-60	F		

In the case of a course average which falls right on one of the boundary values, (92, 90, 88, etc.) the higher grade will be given.

4. OTHER

4.1. **Inclusion.** My goal is to foster a classroom environment that is inclusive, equitable, and inspiring. If you have feedback (preferably constructive) on how I am doing, or ideas that might help me accomplish that goal more effectively, please feel free to share them with me.

4.2. **Disabilities.** If you require classroom or testing accommodations due to a disability, please contact Accessibility Resources, located at 25 Capen Hall. AR can be reached by phone at (716) 645-2608 or by email at stu-accessibility@buffalo.edu. Please inform me as soon as possible about your needs so that we can coordinate your accommodations.

4.3. **Electronic Devices.** Electronic devices are permitted in regular lectures as long as they are **silent** and **not a distraction** to you or others. For example, if you want to take a quick picture of the board, go ahead, but if you can't do so without obstructing the view of the person behind you, that's a problem. Electronic devices are **strictly forbidden during exams**.

4.4. **Tardiness.** You should try to be on time. If you're late, you should try to enter and take your seat without disrupting the class. If people arriving late are regularly a disruption, I will adopt a more formal tardiness policy.

4.5. **Academic Honesty.** The student conduct rules at

<http://www.ub-judiciary.buffalo.edu/rulereg.shtml/>

will be enforced. Examination papers may be scanned, photographed or photocopied. Any cheating on exams will be given the maximum punishment possible. If you are having difficulties please talk to me about it rather than attempting to cheat!

4.6. **Dropping and Resigning.** The final day to drop a course (no record on your transcript) is February 6. The final day to resign from a course (R on your transcript) is April 21. If you are making up an incomplete from a previous instructor please see me to be sure you are following the proper procedures. For information see the Repeat Policy in the UB Undergraduate catalog at:

<http://undergrad-catalog.buffalo.edu/policies/grading/repeat.shtml>