

MA 226 Syllabus

Summer Term 2. Section B1

8 July, 2022

This syllabus is subject to change

Course Description: This course will focus on introductory techniques for analyzing ODEs analytically as well as numerically. Specific topics include, but are not limited to: separable equations, first order linear systems, second order equations, bifurcations, linearization of nonlinear systems, and Laplace transforms. Applications of differential equations to modeling of real world phenomena will be a major focus of examples and problems in this course.

The prerequisites for this course are CAS MA 225, CAS MA 230 or equivalent. This course cannot be taken for credit in addition to CAS MA 231. This course fulfills one unit of the following BU Hub area: Critical Thinking.

Course Format:

Lectures: Lectures will take place MTWTh from 9:00am to 11:00Am EDT in CAS 206. The first day of class is July 5 and the last day of class is August 11. Additionally, Friday, July 8 will have a Monday schedule (i.e. we will have lecture).

Homework: Homework will be assigned on a weekly basis and will be submitted through Gradescope. I will attempt to point out which problems can be completed based on the material covered in each lecture. I strongly recommend that you work on these problems the same day as the lecture. You will be able to submit work up to 48 hours after it is due for a penalty of 25%.

Exams: There will be 1 midterm exam and a final exam. The midterm exam will be on Thursday, July 21 during our scheduled lecture period. The final exam will be on Thursday, August 11 during our scheduled lecture period. Your graded exams will be posted on Gradescope with comments and your physical exam will be returned to you. You will NOT be allowed access to notes, the textbook, or any electronic devices during the exams. If you do not show up to the scheduled exam time and have not arranged an alternative time to take the exam, you will NOT be allowed to take a makeup.

Grades: The final grade for the course will be weighted as follows: 5% Participation, 40% homework, 25% for the midterm, and 30% for the final exam.

Course Materials: The textbook for this course is *Differential Equations* by Blanchard, Devaney, and Hall, Fourth Edition. You will NOT be responsible for material that is not covered in lecture and you will NOT be asked to solve problems which you are not given in full. While you will not directly need the book, it is still a

valuable text with many additional examples and topics we will not cover. It is at your discretion whether or not you purchase/rent a copy of the book.

Instructor Information:

Name: Rob Jencks

Email: jencksr@bu.edu

Keep in mind that it may take 24 hours to read and reply to your emails.

Office Hours:

9:00am to 11:00am EDT in MCS 253

If you are unable to attend any of these times, reach out via email and we can arrange another meeting. Everyone who wants to have a meeting will be able to arrange one.

Drop/Withdraw Information: The last day to drop the course without a "W" is July 11. The last day to withdraw from the course with a "W" or to change to a Pass/Fail grade is July 28. Add/drop forms can be found on the registrar's website.

Absences and Make-ups: Please communicate any circumstances which will prevent you from completing your work by the time it is due as soon as possible. Due dates can be adjusted for concerns such as religious observances or family emergencies.

Academic Integrity: Your work and conduct in this course are governed by the CAS Academic Conduct Code. This code is designed to promote high standards of academic honesty and integrity as well as fairness. It is your responsibility to know and follow the provisions of the code. In particular, all work that you submit in this course must be your original work. Any cases of suspected academic misconduct will be referred to the CAS Student Academic Conduct Committee.

Disability Accommodations: If you have a disability and a letter from Disability & Access Services, contact me so that we can make sure your needs are being met. If you believe that you have a disability which warrants an accommodation but do not yet have a letter from Disability & Access Services, please contact them as soon as possible. I am not able to provide accommodations without a letter confirming what accommodations you are entitled to.

Tentative Schedule:

Week	Lecture 1	Lecture 2	Lecture 3	Lecture 4
1	Intro., 1.1	1.1-1.2	1.2-1.3	1.4-1.5
2	1.5-1.7	1.7-1.9	1.9-2.2	2.4-2.6
3	3.1-3.3	3.3-3.4	Review	Exam
4	3.5, 3.7	5.1, 2.7	3.6, 2.3	4.1-4.2
5	4.2-4.3	4.4	6.1, 6.3	6.2
6	6.4, 6.6	5.2	Review	Exam