

MATH 212 - DIFFERENTIAL EQUATIONS - SYLLABUS

PROFESSOR	AYLA SÁNCHEZ
OFFICE	SC 1323
EMAIL	SANCHEZ_AYLA@WHEATONCOLLEGE.EDU
OFFICE PHONE	(508) 286-5691
OFFICE HOURS	MONDAY 2:00 PM - 3:00 PM TUESDAY 9:00 AM - NOON AND BY APPOINTMENT
CLASS HOURS	MW 12:30-1:50 PM, SC 1314

Course Differential equations are ubiquitous in the hard sciences. Many natural phenomena are governed by relationships between a quantity being measured and its higher derivatives (a differential equation), in which case you must solve for functions which satisfy the relationship. In this course you will learn standard techniques for solving differential equations exactly, as well as numerical techniques to approximate a solution.

Course Text *A First Course in Differential Equations with Modeling Applications, 10th Edition* by Dennis G. Zill. The plan is to discuss most of Chapters 1 through 6 with digressions and omissions as appropriate. Specific sections can be found on the course schedule posted on the OnCourse site and will be amended as the course progresses.

Technology The course website can be found on the Wheaton OnCourse website. All course essentials will be posted there throughout the semester. You should visit this page often. We will be using the program **Mathematica** throughout the semester. You can request access to download it from <https://wheatoncollege.edu/about-wheaton-college/offices-services/started/mathematica/>. Mathematica is very well documented – If you run into issues, you should google your problem before you seek me out.

Course Grades The course grades will be determined as follows:

Event		Percentage
Homework	Problem Sets (Weekly)	10%
	Mathematica Projects	10%
Exams	Exam 1 (Feb 21)	25%
	Exam 2 (April 11)	25%
	Final (May 9)	30%
Total		100%

Intellectual Integrity and Honor Code As with all Wheaton classes, it is expected that each student conduct him/herself with the highest level of academic integrity. This means that while you are encouraged to work together, you ultimately are responsible for your own learning and must document any help received. All students are expected to conduct themselves in accordance with the Wheaton College Honor Code. You should write the following statement on all coursework: “I have abided by the Wheaton College Honor Code in this work.”

Exams There will be 2 in-class exams during the semester. The dates for these exams are Feb 21 and April 11. Each exam will be roughly cumulative but will focus on the material covered since the last exam. The final exam will be held during the assigned time, which is **2 pm on Wednesday, May 9**. DO NOT plan to leave campus before then. If you are absent for an exam without prior notice, you will receive a zero. If you know that you will have to miss an exam for any reason (travel is not an acceptable reason), you should notify me as soon as possible.

Homework There are two types of homework for this course: Problem Sets and Mathematica Projects. You will have weekly problem sets that are **due each Wednesday session**. The problem sets will help both you and me to gauge your learning of the course material. The problems will be a mixture of computational exercises from the book as well as conceptual questions that are to check (and enhance) your understanding.

No late homework will be accepted. If you know that you will miss a class, you should drop the homework off at my office before class starts or have a friend bring your homework to class. If you work with another student or include any ideas that are not your own, you **MUST** acknowledge this on the homework and give attributions to any particulars.

The second type of homework consists of Mathematica projects. There will be three such projects with due dates announced ahead of time. The goals of the Mathematica assignments are to learn how to put our theory into practice, to solve questions that would be cumbersome to approach by hand, and to give you some exposure to programming. It is not assumed that you know anything about programming or Mathematica. After you have learned a sufficient amount of Mathematica, it would be beneficial for you to reproduce the solutions to the homework exercises.

Class Participation and Expectations You must come to each class prepared to participate. I expect that you will have spent quality time preparing for each class; this includes reading ahead in the text as well as trying problems on your own. I expect meaningful contributions from each of you. These include asking thoughtful, relevant questions, explaining your understanding of material or difficulties with topics, bringing examples to class, and being an overall active participant in each class meeting. I will invite you (read: call on you) to participate if the discussions tend to include the same few students or if there are several students who tend not to speak up in class. To encourage everyone to participate, I expect that each of you will treat every other student (and myself) with respect.

Office Hours I encourage you to make use of my regularly scheduled office hours. You should not wait until after you spend multiple lessons confused and/or lost to come see me. You should expect to work on the course material on your own outside of class, but sometimes you may need to have an additional conversation about the material for it to really make sense. I expect that you will use office hours wisely however, and will always come prepared with well-organized questions and evidence of progress on particular homework problems before meeting with me. I will not reteach classes or give solutions during office hours, but I will help you develop a better understanding of the material and aid in your progress on problems when I see that you have made attempts on your own already.

Accommodations for Disabilities

Wheaton is committed to ensuring equitable access to programs and services and to prohibit discrimination in the recruitment, admission, and education of students with disabilities. Individuals with disabilities requiring accommodations or information on accessibility should contact Abigail Cohen, Assistant Dean for Accessibility and Assistive Technology at the Filene Center for Academic Advising and Career Services: cohen_abigail@wheatoncollege.edu or (508) 286-8215

You must make arrangements with me at least 2 weeks prior to any assignment on which you need accommodations. I will not be able to accommodate requests at the last minute.