

Math 303-1
Engineering Math 2

Winter Semester 2018

Professor: *Vianey Villamizar* **Class:** 9:00 - 9:50 a.m. MTWThF 3104 JK
Email/Phone: vianey@math.byu.edu / 422-1754 **Web page:** www.math.byu.edu/~vianey
Office: 342 TMCB **Office Hours:** Monday 3:00 – 4:00 a.m.
 Wednesday 3:00 - 5:00 p.m. or by appointment

TA: Cache Thompson (email: cache@mathematics.byu.edu)
 MathLab Office Hours: Tuesday 2:00-3:00 pm and 4:00-6:00 pm; Thursday 4:00-6:00 pm
Graders: Cameron Hernandez (email: cameronbhernandez@gmail.com);
 Cole Thatcher (email: thatchercole@hotmail.com)
Text: Elementary Differential Equations, 10th Edition, Boyce - DiPrima, Wiley 2012.

Objectives: To provide the students with a sound and accurate knowledge of the elementary theory of ordinary and partial differential equations. Physical problems have motivated the development of much of mathematics, and this is especially true of differential equations. Many fundamental problems in science, engineering, and other areas as economics are described by differential equations and more and more problems of new and emerging technologies are also described by differential equations. The learning of differential equations can be greatly enhanced by use of Mathematical software, such as MAPLE. I will include MAPLE demonstrations in most of my classes. You can find the corresponding worksheets on my web page. I highly recommend you to get some expertise in its use and syntaxes. Many of the problems are best approached with computational assistance.

I believe that my role as your instructor is to help and assist you in the process of learning mathematics. I will do my best to fulfill this role. I know that we will enjoy this class as we go along by making a consistent effort throughout the semester. **My best advice to you is found in D&C 4:2 replacing the first line by ... O ye that embark in Math 334, see that ye work with all**

Learning Outcomes: You will find the information about the learning outcomes for this course at: https://math.byu.edu/wiki/index.php/Math_303:_Math_for_Engineering_2

Course Web Page: There is a course web page at

<https://math.byu.edu/~math303>

for all sections of Math303. It contains most of the information about and material for this course, such as: this syllabus; exams information; homework information (sections and due dates) and lessons schedule. You should check this site regularly.

Professor Vianey Villamizar Web Page: In my personal web page at <https://math.byu.edu/~vianey> I have class notes, MAPLE worksheets, and this syllabus. You can download the class notes directly from this site. I strongly encourage you to carefully study my class notes as preparation for the exams and for working on homework problems.

Homework: Homework will be due on Monday and Wednesday at 6:00 pm most of the weeks. However, there are some weeks with different days for homework collection (see the Class, Exams, and Homework schedule). You are strongly encouraged to work on homework problems everyday. You should be willing to put in at least two to three hours outside the classroom for each hour of class. **I expect that you do not work on your homework during the class period.** Solutions to exercises should be clearly written and adequately explained. In other words, it is insufficient just to write down the answer.

Late homework will not be accepted. To make up for this your lowest four homework (Sections) grades will be dropped. This policy will take care of any extraordinary circumstances as for example a sickness, an accident, and others. Discussion of homework assignments is encouraged, but you should keep in mind that your final written **homework should be your own work.**

Homework Format (PLEASE ADHERE TO THE FOLLOWING HOMEWORK FORMAT): Use one side only of standard letter-sized paper. Put your name at the top of each sheet. Keep problems in order, and label each problem with its number and page. Place only one problem in any horizontal space; visually separate consecutive problems by drawing a line between them entirely across the page. If the problem has a

numerical answer, highlight it in some way. If the answer to a problem involves a sequence of logical steps, set them clearly. Use correct grammar and complete sentences.

To submit homework, stack the sheets in order and fold the stack lengthwise to form a “book” with the back of the last sheet on the outside. On the front of the “book,” write your name, your Math 303 section, and the section of the text from which these problems are taken. Each homework sets should contain problems from only one section of the text. **Homework problems to be graded will be chosen among the whole set of problems.** Incomplete homework will receive partial credit according to the amount of problems worked out.

Exams: The **Midterm exams and Quizzes** will be based on the material specified in the Class Schedule. The final exam will be comprehensive. The Midterm exams will be given in the testing center. I expect that most students will finish it in at most three hours. However, the time limit will be up to four hours.

The **Quizzes** will also be given in the testing center. I expect that most students will finish it in at most 1 hour and 30 minutes. However, the time limit will be up to two hours. Only scientific calculators will be allowed in the exams and quizzes. No books and no other notes will be allowed. Make up exams or quizzes cannot be arranged except in case of an emergency or absence due to official university business.

The questions will be similar to those discussed in class, or those assigned as homework, but some of them will require a good understanding of the concepts and techniques. The best way to prepare for the exams is to go over the homework problems and the examples worked in class (they constitute your **best study guide**) and then try to solve related problems that you haven't seen before. **If you can reach the point where you can do fresh problems without help in all sections, I can anticipate that you will be able to successfully solve all problems on the midterms and final exam.**

Grading: Grades will be based on cumulative points earned as follows:

Homework 20 %, Quizzes 19%, Midterm 36% (18% each), and Final 25 %.

At the end of the semester, **I will make an average based on each one of the above forms of evaluations with their corresponding weights. Then, if necessary a Gaussian curve will help me to determine your final grade.** In any event, the Gaussian curve will not hurt your grade. I will guarantee the following letter grades:

	B+ = 89-87%,	C+ = 79-77%,	D+ = 69-67%,	
A = 100-93%,	B = 86-83%,	C = 76-73%,	D = 66-63%,	E = 59-0%
A- = 92-90%,	B- = 82-80%,	C- = 72-70%,	D- = 62-60%,	

Keep in mind that a good grade is the end result of a good learning process. All of you can get a good grade by successfully experiencing this learning process.

Sexual Harassment: Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education and pertains to admissions, academic and athletic programs, and university-sponsored activities. Title IX also prohibits sexual harassment of students by university employees, other students, and visitors to campus. If you encounter sexual harassment or gender-based discrimination, please talk to your professor or contact one of the following: the Title IX Coordinator at 801-422-2130; the Honor Code Office at 801-422-2847; the Equal Employment Office at 801-422-5895; or Ethics Point at <http://www.ethicspoint.com>, or 1-888-238-1062 (24-hours).

Student Disability: Brigham Young University is committed to providing a working and learning atmosphere that reasonably accommodates qualified persons with disabilities. If you have any disability, which may impair your ability to complete this course successfully, please contact the University Accessibility Center (UAC), 2170 WSC or 422-2767. Reasonable academic accommodations are reviewed for all students who have qualified, documented disabilities. The UAC can also assess students for learning, attention, and emotional concerns. Services are coordinated with the student and instructor by the UAC. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures by contacting the Equal Employment Office at 422-5895, D-285 ASB.

Respectful Environment: "Sadly, from time to time, we do hear reports of those who are at best insensitive and at worst insulting in their comments to and about others... We hear derogatory and sometimes even defamatory comments about those with different political, athletic, or ethnic views or experiences. Such behavior is completely out of place at BYU, and I enlist the aid of all to monitor carefully and, if necessary, correct any such that might occur here, however inadvertent or unintentional. "I worry particularly about demeaning comments made about the career or major choices of women or men either directly or about members of the BYU community generally. We must remember that personal

agency is a fundamental principle and that none of us has the right or option to criticize the lawful choices of another." President Cecil O. Samuelson, Annual University Conference, August 24, 2010 "Occasionally, we ... hear reports that our female faculty feel disrespected, especially by students, for choosing to work at BYU, even though each one has been approved by the BYU Board of Trustees. Brothers and sisters, these things ought not to be. Not here. Not at a university that shares a constitution with the School of the Prophets." Vice President John S. Tanner, Annual University Conference, August 24, 2010.

Academic Dishonesty: As a student at Brigham Young University you are bound by the Honor Code to conduct your life ethically and honorably. For purposes of the Testing Center, we consider the following to be academically dishonest:

- Copying from another person's work during an examination.
- Allowing someone to copy from you during an examination.
- Using unauthorized materials during an examination.
- Taking an examination for another or permitting another to take an exam for you.
- Obtaining or providing to another an un-administered test or answers to an un-administered test.
- Removing or attempting to remove a test, its answers, or any portion thereof from the Testing Center Consistent with the expectations of the University Honor Code, individuals caught engaging in any of the above-described behaviors will be referred to the Honor Code Office and to their instructor for appropriate disciplinary action.