

MATH 2622 - Differential Equations

CT State Community College - Spring 2025, CRN 42387

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Office Hours in LRC A206. Tuesday and Thursday 11:00-12:30

Textbook. *Differential Equations*, 4th edition, by Blanchard, Devaney, and Hall
Published By Thomson, Brooks/Cole ISBN 978-0-495-56198-9

Calculator. TI-83, TI-83+ or TI-84.

Content. The course is a first course in differential equations for students in mathematics, science, and engineering. The course will cover solution methods for differential equations including selected first order equations, n^{th} order equations and systems of linear equations using matrix techniques, Laplace transforms and numerical methods.

Online Course Expectations. Online courses are very different from face to face courses, and require additional skill sets to be successful. It is **highly recommended** that you think about the following expectations very carefully when deciding whether or not to take a course online.

- **Time Requirements.** Face to face courses during a fall/spring semester require three hours of study outside of the classroom for each hour in class. Thus for a four credit course, each week during the regular semester consists of four hours in class and twelve hours outside of class, for **a total of 16 hours per week**. For an online course, the numbers are the same, but (obviously) all 16 hours are outside of class.
- **Time Management.** A very important part of taking an online course is effective time management. Set aside specific time blocks during the week to work on this course. Pay attention to assignment deadlines. This is **NOT** a self-paced course, where the assignments may be completed at your own pace by the end of the semester. There are specific deadlines for every assignment, and **they cannot be extended under any circumstance**.
- **Communication.** In an online course, our primary method of communication is by email and the Online Course Portal (details below). It is **essential** that you be reachable by email, so if you do not currently check your official college email every day, you must start. I will assume that 24 hours after I send you an email you will have read it, and you will be responsible for its contents. **No exceptions.** If your access to email is inconsistent, then an online course is a very bad choice.

For my part, I will always answer any messages you post to me within 24 hours, including weekends. Often, I will respond quite quickly, but you should plan on having a response within 24 hours. This is another reason why you should expect to complete your assignments at least **24 hours in advance** of the posted deadline (see below).

- **Reliable and Fast Internet Access.** This course requires access to the internet. You should have **at least two backup options** ready to go should your computer crash or your internet go down. These may include a computer lab on campus, a local public library, a coffee shop with WiFi, a computer at a friend's house, an iPad or Android tablet with a cellular data plan, etc. Think about how you would get access to the internet if your main internet connection went down.
- **Technical Knowledge and Tools.** Your primary means of interacting with the course materials will be a website. You should therefore be comfortable using your computer, the world wide web, and the internet in this way. You should have a standard browser installed and updated (Chrome, Internet Explorer, Firefox, and Safari are supported, as are Android and iPad devices) as **I cannot provide technical assistance for using your computer**.

You will also need the ability to upload copies of your hand-written work throughout the course. You may do this using a tablet and stylus, by writing on paper and scanning, or taking pictures with your smartphone, etc. whatever your method, it must result in high-resolution files, as either standard image formats (JPEG, GIF, PNG) or a PDF. No other files, including DOC/DOCX are acceptable; it must be an image or a PDF.

Grading. There will be weekly quizzes, except for the weeks on which we have exams. There will also be three exams, and a cumulative final. Your final grade for the course will be the average of all of your grades throughout the semester; they will be weighted as follows:

Average Calculation.

Quizzes	15%
Each Exam	20%
Final Exam	25%

The following is the number to letter grade conversion that will be used in this course.

A	93-100	B	83-86.99	C	73-76.99	D	63-66.99
A-	90-92.99	B-	80-82.99	C-	70-72.99	D-	60-62.99
B+	87-89.99	C+	77-79.99	D+	67-69.99	F	0-59.99

Please notice that no outside factors, including any need for a certain grade for admission/retention in any academic program, scholarship or transfer credit, graduation requirements or personal desire for a specific grade appear in the above listing, and thus are not considered in any way in the determination of your course grade. Effort, improvement, class attendance and participation will all dramatically improve your grade in the course in that they will allow you to do well on quizzes, exams, and the final exam. They will **NOT**, however, actively participate in the calculation of your course grade. Any questions or concerns regarding your course grade should be discussed well before the final exam. Once the final exam is administered, your grade is final and no makeups or extra credit will be offered. Additionally, incompletes will not be given to students who are dissatisfied with their grades at the end of the semester.

Textbook, Lectures Notes, and Homework. Homework exercises from the textbook will be assigned at the end of each section. In addition to these exercises, it is expected that you read each of the sections of the textbook that are covered in the lecture notes. You should first go through the lecture notes in the Online Course Portal, and then read the textbook, as there will be some topics that are covered in the textbook which we will not cover in the course material. You are responsible for learning and understanding all of the material presented in the lecture notes and assigned as homework; quiz and exam problems will be chosen assuming you know how to do all examples presented in lecture, the homework, and in the textbook. The homework exercises are your chance to learn, practice, make mistakes, and ask questions, before completing the graded assignments. They will not be collected or graded.

Quizzes. Quizzes will test the mathematics being used in the course; there will be weekly quizzes covering sections learned the week before. These quizzes will be administered online through the Online Course Portal (details below). Quizzes may be repeated (with possibly different questions) as many times as you like, up until the deadline, and your final, graded score will be the most recent of your attempts.

Quizzes are meant to be completed in a single sitting, without interruption. If you begin a quiz and do not complete it right away in a single sitting, it will not be available to continue later. Incomplete quizzes will not be graded.

Exams. We will have three exams all of which will be administered online through the same system as the online quizzes. Exams may be repeated (with possibly different questions) as many times as you like, up until the deadline, and your final, graded score will be the most recent of your attempts.

Exams are meant to be completed in a single sitting, without interruption. If you begin an exam and do not complete it right away in a single sitting, it will not be available to continue later. Incomplete exams will not be graded.

The Final Exam. The final exam will be similar in length and format to the exams, except that it will include material from the entire semester. The purpose of this exam is to show retention and mastery of the course material. The final exam may be repeated (with possibly different questions) as many times as you like, up until the deadline, and your final, graded score will be the most recent of your attempts.

Multiple Quiz/Exam Attempts. As noted above, you will be able to take all quizzes and exams for this course as many times as you want up until the deadline, and the most recent grade will be the final score. This is a **huge benefit**, and there are some conditions.

- I expect that all attempts at quizzes and exams are done with your full intention to do well and complete the entire assignment. Do not go through quizzes and exams just to have a look at them, or try to see all possible questions (there are thousands of problem versions in the problembank).
- Multiple attempts at each assignment are intended to allow you to improve your score after having reviewed the course material. Generally, it is not beneficial to retake an assignment with no review in between, and therefore there will be a time delay between consecutive attempts at an assignment.

- You must upload work for all problems for **every attempt at every quiz and exam**, and do so immediately after completing that assignment. If you have technical trouble with uploading, you must contact your instructor immediately (do not upload another image just to complete the process). All uploads must be completed by the assignment deadline of 11PM.
- You will not be able to see your previous attempts at quizzes and exams before retaking them; they will all be visible after the deadline. You will be able to see your score after each attempt, but you will not know which problems were correct or incorrect.

This is intentional; you will need to go back through all of the problems on a previous quiz/exam and do them, from scratch, to determine where your mistakes were and rectify them. This reinforces your understanding of the material and is a major part of the learning process for this course. I understand that at times it can be frustrating.

There is significant value in you taking a quiz or exam, seeing a result (but not which problems are correct or incorrect), and then going back over those specific problems to confirm which are correct, fixing your own mistakes, and retaking it. I am more than happy to help you with **specific** questions that you have about similar problems, usually from the homework, but I will not simply tell you which problems are correct, or check a specific problem from start to finish for you.

- I will not help you work through problems from quizzes or exams until after they are due and no further attempts are possible, just as I would not tell you how to do exam problems during an in-class exam.

Students violating any of these conditions (in the sole discretion of the instructor) may be limited in the number of attempts at quizzes and/or exams. Quiz or exam grades may also be modified after the fact in these cases.

Uploaded Work and Grading Modifications. For all quizzes and exams that you complete, you will need to upload your hand-written work for each problem. To be clear, there must be a fully worked-out, hand-written solution for absolutely every problem on every quiz or exam that you complete. These will be uploaded immediately after each quiz/exam is completed. As stated above, you **MUST** have the technical capability to take your hand-written work (on paper or on a tablet) and generate either image files or a PDF of that work, and upload that through a web browser. This is a crucial part of this course!

- An analytic solution must be fully worked out, in neat legible writing, showing all steps of your solution. Your process must be organized and follow the patterns set forth in the lecture notes and textbook.
- For any multiple choice problems you must justify why your answer is correct, either supporting the answer with a solution, fully worked out as described above, or a written out explanation proving why that answer is correct and the others are not.

Any problem on any quiz or exam that is not accompanied by a worked-out solution, or that solution is incomplete, illegible, incorrect, or does not match the entered solution, will have its score changed to a zero, regardless of whether or not the “final answer” is correct or not. If no work is uploaded for an assignment, then the entire assignment will receive a grade of zero.

- It is worth emphasizing that **absolutely every single problem must have work!** Even very short problems (there’s always a thought process, explain it). Even True-False problems (a justification of why it is true, without just rephrasing the problem, or a counterexample if it is false). Even problems that you can compute in your head (write it out anyway). **Every. Single. Problem.**
- If your most recent quiz or exam attempt has its grade adjusted (due, for instance, to not uploading sufficient work), it will still be the attempt that is the final score **even if the grade adjustment moves it lower than a previous attempt.**
- Your work for each problem must actually **match the solution that you enter**. If the answer that you enter is not supported by your work (for instance, your work results in $x = 5$ and you enter 7 in the interface), this is the same as not having work for the problem and it will not receive credit (even if 7 is correct and the interface initially marks it as correct).
- Problems must appear in order, and be labeled with the problem number. I have over a hundred students, and grading uploaded work is incredibly time consuming, so please help me by making your work easy to follow. I cannot go on a treasure hunt looking for the correct work for a given problem.

- Just as for in-person class work, your work **must be clear, legible, and it must be easy to follow your thought process**. Mathematics is not a random and indecipherable scribble of numbers and symbols with a circled value at the end. Show your thought process, step-by-step, from the problem to your final solution.
- The Online Course Portal will give a **preliminary** grade when you are done with an assignment, but it, of course, cannot take your work into account. I grade the work manually, afterwards, so the grade that you see when you finish an assignment is provisional, pending my review of your work.
- When I grade the first assignment, many students who have not followed these instructions (no work for short, true-false, or multiple choice problems, very sloppy/unreadable work, etc) and are then shocked to see the grade change as a result. Their response is that they did not think I was serious about all of these statements. **Please believe that I am.**

For some quizzes and exams, individual problems will have the work graded in detail. This may result in the automatically generated score on the quiz or exam going either up (due to small mistakes on an otherwise correct procedure) or down (due to mistakes in your work that coincidentally resulted in the correct final answer). The problems that will be graded in this manner will be selected by me, and done uniformly for all students. Please do not ask me to award partial credit on specific problems on your assignments; I am already doing this in a uniform manner.

All automated grades seen in the online system after completing an assignment are tentative pending review of uploaded work.

Deadlines. Each assignment given in this course will have a deadline. All of the quizzes and exams will have a due date listed in the Online Course Portal, and each assignment must be completed by 11 PM Eastern Time on the due date, including work uploads.

Since you have multiple weeks during which each assignment is available, I cannot make any exceptions to these deadlines, so **I highly recommend planning ahead!** In particular, each assignment should be completed **at least a few days before the posted deadline**. The format of this course offers tremendous flexibility in when during the week you decide to do your work, but it **MUST** be done during each week. Please do not wait until the last possible minute, as this reduces your options for technical support if you experience a problem, and it limits your time available to retake assignments.

Deadlines may vary from week to week, so it is very important to log in once early in the week to check when assignments will be due for the week. New assignments are posted on Sunday morning, so you must log in each week absolutely no later than Monday to check the assignments for the week. Missing an assignment due to not having logged in and checked your To-Do list will not be treated any differently than other missed assignments; **deadlines cannot be extended, no exceptions.**

Allowing assignments to be completed at any time over two weeks together with allowing multiple attempts at graded assignments is an incredibly high degree of flexibility, and it is very unreasonable to request deadline extensions under these conditions.

Extra Credit. There will be absolutely no extra credit available in this course. To succeed in the course, you must keep up with the regular credit. Please do not ask for extra credit, ways to make up missed assignments, ways to “boost your grade” or other similar phrasings. The answer is always no.

Course Grade Status Updates. Periodically, a reminder to check your current grade in the course will automatically be added to your “To Do List” in the Online Course Portal (see below). Clicking on this link will show you an estimate of your current grade in the course, and the details of your score. Be sure to check your grades frequently to avoid any surprises at the end of the term. The time to start working on bringing your grade up is **now**, not a week before the final exam.

Online Course Portal. In order to keep online course organization as simple as possible, and avoid complicated interfaces with unnecessary features, we will use a custom Online Course Portal. All work that you need to do for the course will be organized on your **To-Do List**, you will be able to see upcoming assignments and due dates for the next two weeks. Each time you complete an item you can check it off your To-Do List.

Everything for this course (all quizzes and exams, lecture notes, documents) is available in, and must be completed through, the Online Course Portal. This is a website for which you will be given a login name and password. You may access the Online Course Portal at

<https://professorbella.com/math2622>

It is recommended to access the Online Course Portal using the Chrome browser for best results, though other browsers should work properly as well. Note that the Portal is also accessible by smaller screens such as smartphones and tablets, though you may find some parts of the system more difficult on a smaller screen.

It is possible that during the semester, the Online Course Portal will be unavailable between Friday nights at 11pm (right after many assignments are due for the week) and the following Saturday morning at noon. If the system requires maintenance, this is when it will be done, so please do not plan this as a crucial time for you to access it. Note that this maintenance is not likely, but if it is required, this is when I will handle it.

Blackboard. You can access the course materials through Blackboard by clicking on the link for the Online Course Portal, but no actual materials for the course will be available in Blackboard. It would be best, however, to access the Online Course Portal directly through the address above as Blackboard may be unreliable.

Academic Integrity. Cheating **of any kind** will not be tolerated. Anyone caught cheating will either receive a failing grade on the assignment in question, or a failing grade for the course, which will be decided at the instructor's discretion. For the official college policy on academic dishonesty check the college catalog.

In particular, by submitting any work for this course, you are certifying that that work was done by you alone without using outside assistance of any kind.

Withdraw Policy. The last day to withdraw from this course is April 17, 2025. After this date you will receive the grade that you have earned based on the work that you have done during the semester. **There will be no withdraws given after this date for any reason, no exceptions.**