



# Course Syllabus

## Differential Equations

MAP 2302 /Section / Semester

3 Credit Hours/3 Contact Hours

Pre-requisites/Co-requisites: MAC - 2313 or consent of instructor.

## Contact Information

### Instructor

Name:

Title:

Email:

Phone Number: (850) 769-1551 X

Office Location:

Office Hours:

Response Time:

### Division Chair

Name: Hadley Pridgen

Title: Division Chair & Professor of Mathematics

Email: [Hpridgen@gulfcoast.edu](mailto:Hpridgen@gulfcoast.edu)

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### Division Administrative Assistant

Name: Scott Spencer

Title: Academic Technology Specialist

Email: [sspencer@gulfcoast.edu](mailto:sspencer@gulfcoast.edu)

Phone Number: (850) 747-3229

## Course Information

### Curriculum:

An instructional program that describes the application of mathematical principles to the solution of functional area problems, using the knowledge base of the subject or field for which the analytical procedures are being developed. Includes instruction in computer-assisted mathematical analysis and the development of tailored algorithms for solving specific research problems. Topics Included are:

1. Methods of solution of ordinary differential equations.
2. Linear equations and systems of linear equations.
3. Methods, which may include:
  - Operators
  - Undetermined coefficients
  - Variation of parameters
  - Laplace transforms
  - Series solutions
4. Boundary value problems

#### Student Learning Outcomes:

1. Classify the order and type of differential equations.
2. Use graphic techniques to interpret the solution to differential equations.
3. Recognize and solve different types of first order differential equations using appropriate techniques.
4. Solve initial value problems of the above types.
5. Formulate a differential equation as a mathematical model of physical situations.
6. Be able to solve second order and higher linear ordinary differential equations.
7. Use numerical methods to approximate solutions to differential equations.
8. Use Laplace transforms to solve initial value problems.
9. Understand the difference between general solutions and specific solutions to differential equations and initial value problems.
10. Understand linearly independent functions and a basis solution set.
11. Transform a given ordinary differential equation into a system of first order equations and solve.

#### Course Materials & Resources:

Differential Equations and Boundary Value Problems, 6<sup>th</sup> ed., ISBN 978-0-13-754016-7. All homework will come directly from the textbook. Students will also find the textbook beneficial for completing quizzes and preparing for presentations.

Graphing Calculator: A graphing calculator is also required (TI-83 or TI-84). The problems in the textbook, software, and course videos are illustrated using the TI-84+. Students are expected to have their own calculators. If a student wishes to use any other calculator, they must see their instructor in advance for approval.

## Delivery Method:

This is a face-to-face course. This course is lecture based. Outlines for each lecture will be provided to the student in the classroom. Course material, assignments, and announcements may be offered via Canvas as a supplemental approach to learning at the discretion of the instructor. Please make sure that you have access to a computer with a webcam and internet service, in the event a change in course delivery is needed.

## Student Expectations

In this course, communication and feedback will occur through various channels, including GCSC email, Canvas Inbox, Canvas Announcements, Canvas Discussions, Microsoft Teams or Zoom, assignment feedback, and instructor office hours. Review the statements below so that you understand the expectations for communication.

As a student at Gulf Coast State College, you are expected to:

- **Adhere to Course Guidelines:** Follow the guidelines detailed in the course syllabus, along with any additional instructions provided by the instructor. This includes understanding and complying with the course objectives, grading criteria, and academic policies.
- **Maintain Regular Contact:** Keep in touch with your instructor and classmates via your GCSC email or other designated communication channels. Regular contact helps clarify doubts, share ideas, and foster a collaborative learning environment.
- **Active Participation:** Engage actively in class discussions and submit assignments on time. Your active participation is crucial for your academic success and contributes to a vibrant learning community.

As your instructor, my commitment to you is to:

- **Provide Timely Feedback:** I will review and provide feedback on your assignments and submissions promptly. My goal is to help you understand your strengths and areas for improvement, which is crucial for your academic growth.
- **Respond Via Canvas Inbox:** I will respond to your emails or messages within 24-48 hours (excluding weekends), unless otherwise noted. I understand the importance of clear and timely communication in addressing your questions and concerns.
- **Post Regular Announcements:** To keep you updated and help you manage your time effectively; I will send out weekly reminders via announcements. These reminders will include important dates, upcoming assignments, and any changes to the course schedule.
- **Maintain Weekly Office Hours:** I will maintain regular weekly office hours, but I can also be available by appointment. This is to ensure I'm available for any questions or concerns that may come up during the week.

## Course Schedule

Fall 2026

Monday		Wednesday	
8/17	Syllabus and Course Layout	8/19	Sections 1.2 and 1.4
8/24	Sections 1.4 and 1.5	8/26	Section 1.5 and 1.6
8/31	Finish 1.6	<b>9/2</b>	<b>Test 1</b>
<b>9/7</b>	<b>Labor Day No Class</b>	<b>9/9</b>	<b>Presentation (Section 1.3)</b>
9/14	Sections 2.1 and 2.2	9/16	Sections 2.2 and 2.3
<b>9/21</b>	<b>Presentation (Section 2.4)</b>	9/23	Sections 3.1 – 3.3
9/28	Sections 3.1 – 3.3	9/30	Cauchy-Euler Equations
<b>10/5</b>	<b>Test 2</b>	10/7	Sections 3.4
10/12	Section 3.5	10/14	Sections 3.5 and 3.6
10/19	Section 3.6	10/21	Section 3.7
<b>10/26</b>	<b>Presentation (Section 3.8)</b>	<b>10/28</b>	<b>Test 3</b>
11/2	Sections 7.1 and 7.2	11/4	Sections 7.2 and 7.3
11/9	Sections 7.3 and 7.4	<b>11/11</b>	<b>Veteran's Day No Class</b>
11/16	Section 7.4 and 7.5	11/18	Section 7.5 and 7.6
11/23	Sections 7.6	<b>11/25</b>	<b>Thanksgiving No Class</b>
<b>11/30</b>	<b>Test 4</b>	<b>12/2</b>	<b>Presentation (Final Exam Review)</b>
<b>12/7</b>	<b>Presentation (Final Exam Review)</b>	12/10	Final Exam

Section 8.1 will be a take home assignment

Last day to withdraw is October 14

Gulf Coast State College supports an inclusive learning environment for all students. If there are aspects of the instruction or design of this course that hinder your full participation, reasonable accommodations can be arranged. Prior to receiving accommodations, you must register with Student Accessibility Services. Appropriate academic accommodations will be determined based on the documented needs of the student. For information regarding the registration process, email [sar@gulfcoast.edu](mailto:sar@gulfcoast.edu) or call 850-747-3243.

## Grading

### GCSC Grading Scale

A (100-90), B (89-80), C (79-70), D (69-60), and F (59-0).

## Calculation of Grades

Four-unit tests will be given. The unit tests will be announced in advance, will count equally (15%), and will be returned. Take home assignments (either homework or quizzes) will be given and the average of these assignments will count 5%. There will also be a required group presentation that counts 10%. A final exam will be given and if all unit tests have been taken, the final exam grade may be used to replace the lowest unit test grade. The final exam **cannot** be used to replace the assignment average or group presentation grade. The final exam is comprehensive and count 25%. The final exam **will not** be returned. There are **no exemptions** from the final exam. The student is expected to keep up daily with the assigned work. The assignments assigned from the textbook, which must be completed by the due dates set forth by the instructor. Pay **CLOSE** attention to the deadlines in Canvas or verbally presented in class because once the deadline is reached, **NO** late assignment submission will be accepted. Although only some assignments are assigned, you will need to do many problems from the textbook for practice so you can be prepared for each test. It is important to keep up with the weekly schedule by setting aside a considerable amount of time to watch the videos for each lesson before attempting to practice problems.

## Incomplete Grades

Grades of Incomplete in any course can only be assigned to students who have an emergency arise during the last two weeks of the course. To receive an Incomplete, students must:

- Submit a written request to the instructor prior to the last face-to-face class meeting. For online courses, a written Incomplete request must be received no later than the week before the Final Exam period begins.
- Have completed no less than 60 percent of the course requirements and be passing the course at the time the request for an Incomplete is submitted.

**Important Note:** The Incomplete option provides 30 days from the date grades are due to make up any missing work; if work is not submitted during this period, the grade will automatically change to an “F” in Lighthouse.

## Course Policies

### Accessibility Statement

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### Attendance Policy

Regular class attendance and participation are significant factors that help to promote success in college. Students are expected to attend all class meetings of all courses for which they are registered.

You are expected to know the instructor's specific attendance policy, as stated in the syllabus for each course. In the event of absence, you should contact your instructor as soon as possible to indicate the reason and to inquire whether make-up work is possible. (Make-up work is offered solely at the discretion of your professor.)

If your absences in a class become excessive, as stated in the course syllabus, your professor may contact you, indicating that further absence may result in your withdrawal from the course. Your professor can withdraw you from a course for excessive absences without your permission.

Instructors will monitor attendance at the beginning of each semester. If you are not in attendance during this period, you may be withdrawn from the course. You will be financially responsible for the course and a "W or NS" will appear on your transcript. Withdrawal from a course may also have implications for financial aid.

#### Make-Up Work Policy

- **NO** Extra credit
- **SOME** take home assignment grades may be dropped at the discretion of the instructor.
- Take home assignments are due by the date your instructor sets. It is your responsibility to know and adhere to the due dates.
- **NO** retakes of any tests.
- **NO** test grades will be dropped.
- The Schedule set forth outlines each what is covered and what the deadlines are. You know in advance the testing dates for each test, therefore missing a test is unacceptable and you will receive a grade of zero for that missed test without a make-up. However, if missing a test is unavoidable, then you require prior approval.
- If a test is missed due to a valid excuse and is granted, then a make-up test will need to occur as per agreement with your instructor. Proof of why you missed test will be required and it is the student's responsibility to make necessary arrangements to contact their instructor regarding a make-up test.
- The final exam can be used to replace the lowest unit test grade, if it helps improve your grade.
- Missed test grades (grades of zero) will not be replaced.

#### Withdrawal Policy

Two withdrawals are permitted per credit course. After that, a grade will be assigned. Please be concerned about withdrawals. When admitting students into certain programs, universities may calculate withdrawals as grades. It is your responsibility to verify the effects of enrollment

and/or withdrawal upon your financial assistance (financial aid, scholarships, grants, etc.). There are two kinds of withdrawals---student and administrative.

- *Student Withdrawal (W1)* - Students wishing to withdraw must complete the online Student Withdrawal Form before the scheduled withdrawal deadline as published in the College catalog. Student withdrawals initiated prior to the scheduled withdrawal deadline will be recorded as a grade of "W." The withdrawal deadline for an off-term or condensed term is one week after midterm.
- *Administrative Withdrawal (W2)* – A faculty member may withdraw a student up to the published withdrawal deadline for violation of the class attendance policy in which case the student will receive a grade of "W." The withdrawal deadline for an off-term or condensed term is one week after midterm.

Students cannot withdraw from developmental studies courses (college-preparatory classes) after the drop/add period without written permission from their instructor and/or their academic advisor.

## Academic Integrity

Honest participation in academic endeavors fosters an environment in which optimal learning can take place and is consistent with the college's mission. Academic misconduct, including cheating or plagiarism, is destructive to the spirit of an educational environment. GCSC professors report every instance of student academic misconduct to the college for inclusion on the student's records.

Most course syllabi include an academic honesty policy and the consequences for violating this policy. Familiarize yourself with course policies regarding authorized or unauthorized use of AI to avoid the pitfalls of academic dishonesty.

The following definitions will apply:

"Cheating"

includes but is not limited to use of any unauthorized assistance in taking quizzes, tests, or examinations; dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; the acquisition without permission of tests or other academic materials belonging to a member of the College's faculty.

"Plagiarism"

includes, but is not limited to, the use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment as well as the purchase of papers or projects. It can also include overuse of an editing program like Grammarly or submitting work written by an Artificial Intelligence (AI) generator like ChatGPT. Make certain to consult your course syllabi for your instructor's guidelines of AI material.

"Self-plagiarism"

occurs when a student submits the same or considerably similar document to fulfill requirements in different classes. For example, if a student submits a term paper in Religion they originally wrote for an English class, this is self-plagiarism. Once a paper receives a grade in one class, it cannot be submitted again for another class.

"Generative Artificial Intelligence (AI)"

is technology that uses machine learning to create new content, such as text, images or code, based on user input. These systems are trained on vast amounts of data, including large language models and image or code generators. Common examples include ChatGPT, GitHub, Copilot, Google Gemini, Perplexity, and the Grammarly AI function.

Sanctions for incidences of academic misconduct, depending on the severity of the incidence and/or its repetition, may range from receiving an F grade (or 0) for the test, assignment, or activity, to failure of the course, to suspension or dismissal from the college.

## Classroom Recording

In accordance with federal and state privacy laws, students may record class lectures for their own personal educational use, in connection with a complaint to the college, or as evidence in internal or external legal proceedings. Students may not publish or upload the recordings or any components thereof without the knowledge and written permission of the faculty member. Failure to obtain permission to publish could lead to the students' having to pay damages, attorney fees, and court costs. For more information about what can be recorded, please see the guidelines in the GCSC Student Handbook.

## Generative Artificial Intelligence (AI) Policy

The use of generative AI tools in academic work requires clear guidelines to maintain academic integrity. Please review the policy selected for this course regarding the use of AI tools such as ChatGPT, Copilot, Grammarly's AI features, and similar platforms for assignments, research, and other coursework.

See the student handbook for further information. Students with questions about acceptable use should consult their instructor.

Prohibited Use of AI

The use of AI-generated content is strictly prohibited in all assignments, coursework, and throughout all stages of the work process, such as brainstorming, outlining, or drafting. This includes but is not limited to, tools such as ChatGPT, Copilot, and Grammarly's AI function. Use of AI tools will be treated as a violation of academic integrity and may result in penalties, including a zero on the assignment and additional disciplinary actions as outlined in the college's academic integrity policy.

## Anti-Discrimination Policy

Gulf Coast State College does not discriminate against any person in its programs, activities, policies or procedures on the basis of race, ethnicity, color, national origin, marital status, religion, age, gender, sex, pregnancy, sexual orientation, gender identity, genetic information, disability, or veteran status. All questions or inquiries regarding compliance with laws relating to non-discrimination and all complaints regarding sexual misconduct or discrimination may be directed to Amanda Reed, Executive Director of Human Resources/Title II/504/Title IX Coordinator and Employment Equity Officer, Gulf Coast State College, 5230 W. US Highway 98, Panama City, FL 32401; 850-769-1551, ext. 3516. Rules, policies, fees, and courses described in this catalog are subject to change without notice.

## Syllabus Policy

For any syllabus posted prior to the beginning of the term, the instructor reserves the right to make minor changes prior to or during the term. The instructor will notify students via e-mail or Canvas announcement when changes are made in the requirements and/or grading of the course.

## Student Support Resources

Gulf Coast State College is committed to providing you with the resources you need for success as a student and beyond. View all the academic and student support resources provided at GCSC on the [Student Services web page](#).

## Course Technology & Support

To successfully participate in this online course, students must have basic computer and digital information literacy skills and meet the following technology requirements:

- **Computer:** Up-to-date web browser that supports the Canvas learning management system; please refer to the system requirements for compatibility and information on using the Canvas app on mobile devices.
- **Internet Speed:** Minimum bandwidth of 8 Mbps upload/download speed to effectively engage in online activities and access multimedia.
- **Office 365 software:** Available for free download through GCSC Information Technology Services (ITS).

If you need technical support, contact the ITS Help Desk, available 24/7 at (850) 913-3303.