

# Ordinary Differential Equations (MATH 3305-401)

Summer II 2026 - The University of Texas at Tyler

Kyle Stoltz

**Email:** [kylestoltz@uttyler.edu](mailto:kylestoltz@uttyler.edu) **Classroom:** RBN 4027 **Meeting times:** MTWRF 9:00 AM – 10:40 AM **Office Location:** RBN 4039B

## Office Hours:

- MTWRF 11:00 AM – 12:00 PM
- Open door policy
- By appointment

## Course Description

Introduction to ordinary differential equations, including classification, solutions, and applications of first- and second-order equations; Laplace transforms; and linear systems. Emphasis on both analytical techniques and conceptual understanding. Prerequisite: MATH 2414 (Calculus II) with a grade of C or better.

## Course Objectives

Upon completion, students will be able to:

- Classify differential equations by order, linearity, and type.
- Solve first-order differential equations using analytical methods including separation of variables, integrating factors, exact equations, and substitution techniques.
- Solve second-order linear differential equations with constant coefficients using characteristic equations, undetermined coefficients, and variation of parameters.
- Apply differential equations to model real-world phenomena in physics, biology, engineering, and other sciences.
- Use Laplace transforms to solve initial value problems.
- Analyze and solve systems of linear differential equations using eigenvalue methods and phase plane analysis.
- Interpret solutions geometrically using direction fields, phase portraits, and qualitative analysis.

## Required Materials

- **Textbook:** *Differential Equations: From Calculus to Dynamical Systems*, 2nd Edition. By Virginia W. Noonburg. MAA Press, ISBN-13: 978-1470463830.
- **Calculator:** Scientific or graphing calculator (phones/smart devices prohibited during exams)
- **Notebook:** Dedicated for notes and assignments

- **(Optional) Scanning App:** *Adobe Scan: PDF & OCR Scanner* may be used for homework if you don't want to use a university scanner.

## Grading Policy

Grades are calculated as follows:

- **Attendance and Participation:** 5%
- **Homework:** 15%
- **Quizzes (2):** 20%
- **Exams (2):** 40%
- **Final Exam:** 20%

### Additional Policies:

- The final exam grade may replace the lowest exam grade if higher, provided all exams, quizzes, and homework are completed.
- The course grade will not exceed one letter grade above the final exam grade (e.g., a C on the final caps the course grade at B).
- No extra credit opportunities will be provided.

### Grading Scale:

Percentage	Letter Grade
90–100	A
80–89	B
70–79	C
60–69	D
Below 60	F

## Exam and Homework Policies

- **Quizzes:** Two short quizzes will be administered on Mondays of Weeks 2 and 4, giving students the weekend to prepare. Quizzes are closed-note unless otherwise specified.
- **Exams:** Two midterm exams will be given on Mondays of Weeks 3 and 5. Each exam runs approximately one hour; remaining class time will be used to begin the next section.
  - **Exam 1 (Monday, July 20):** Covers Chapters 1 & 2 (Introduction and First-order Differential Equations).
  - **Exam 2 (Monday, August 3):** Covers Chapters 3 & 4 (Second-order Differential Equations and Linear Systems).
  - Make-ups require prior approval and documented justification (e.g., medical or legal). Exams are closed note and **all work must be shown to receive credit.**
- **Final Exam (Friday, August 7):** Mandatory. Exceptions only with university administration approval. The final exam is cumulative with emphasis on Chapter 6 (Laplace Transforms). The final exam is closed note and **all work must be shown to receive credit.**
- **Homework:** Homework will be assigned after most class periods and is due at the beginning of the next class meeting or as specified on Canvas. Homework must be scanned and submitted as a PDF on Canvas. Homework will be graded based on completion and correctness. Late homework will receive a 50% penalty if submitted within 24 hours; no credit after 24 hours.

## Important Dates

- **July**
  - 3: Payment Deadline (5:00 PM CST)
  - 6: Classes begin (Summer II session)
  - 9: Census Date
  - 13: Drop for non-payment
  - 13 (Monday): **Quiz 1**
  - 20 (Monday): **Exam 1**
  - 27 (Monday): **Quiz 2**
  - 29: Last Day to Withdraw from one or more courses
- **August**
  - 3 (Monday): **Exam 2**
  - 4: Final grade rosters open
  - 7 (Friday): **Final Exam**
  - 8: End of Summer II session
  - 11: Final grades due (12:00 PM CST)

*Dates taken from the UT Tyler Summer II 2026 academic calendar.*

## Course Schedule

**Note:** This is a compressed 5-week summer session meeting five days per week. Students should expect a faster pace and more rigorous workload than a traditional 15-week semester. Quizzes and exams are on Monday to allow students the weekend to study; exams run approximately one hour, with remaining class time used to begin the following section. The Final Exam is held on Friday, August 7. The schedule below is tentative; pacing may be adjusted based on class progress.

Week	Dates	Planned Material	Assessment
<b>Week 1</b>	July 6 – 10	Sections 1.1, 1.2, 2.1, 2.2, 2.3 ( <i>Census Date: 7/9</i> )	—
<b>Week 2</b>	July 13 – 17	Sections 2.4, 2.5, 2.6, 2.7, 3.1 ( <i>Drop for Non-payment: 7/13</i> )	<b>Quiz 1</b> (Mon)
<b>Week 3</b>	July 20 – 24	<b>Exam 1</b> (Mon, Ch. 1–2); Sections 3.2, 3.3, 3.4, 3.5, 3.6	<b>Exam 1</b> (Mon)
<b>Week 4</b>	July 27 – 31	Sections 4.1, 4.2, 4.3, 4.4, 4.5 ( <i>Last Day to Withdraw: 7/29</i> )	<b>Quiz 2</b> (Mon)
<b>Week 5</b>	Aug 3 – 7	<b>Exam 2</b> (Mon, Ch. 3–4); Sections 6.1, 6.2, 6.3, 6.4; <b>Final Exam</b> (Fri)	<b>Exam 2</b> (Mon) <b>Final Exam</b> (Fri)

*Course schedule is tentative; pacing may be adjusted based on class progress.*

**Coverage Summary:** This course covers Chapters 1, 2, 3, 4, and 6 from Noonburg (sections 1.1–1.2, 2.1–2.7, 3.1–3.6, 4.1–4.5, 6.1–6.4).

## Academic Integrity

Academic dishonesty—including cheating, plagiarism, or unauthorized collaboration—will result in a zero for the assignment or exam, potential course failure, and referral to the Office of Student Conduct. Integrity is essential. Academic dishonesty on even one homework will result in a 0% for all homework assignments. Academic dishonesty on one exam or quiz will result in a 0% on the exam, while academic dishonesty on two exams or quizzes will result in a 0% for the course. Academic dishonesty on the final exam will result in an automatic 0% for the course. *Do not access electronics during assessments; Unauthorized device access will result in a 0% for that assessment.*

## Electronic Devices

Silence all electronics not used exclusively for note-taking and store them out of sight before entering the classroom. Electronics include but are not limited to smart-watches, smart-phones, smart-glasses, ear-buds, tablets, laptops, and portable gaming devices. [Evidence shows divided attention interferes with long-term retention for the whole class.](#) Therefore, a student who does not abide by this policy hurts the whole class. If you have an unusual circumstance that requires you to access an electronic device in class for reasons other than notes, please obtain approval ahead of time. *Do not access electronics during assessments; Unauthorized device access will result in a 0% for that assessment.*

## Collaboration Policy

You may discuss the concepts and problem types included in the homework, provided you do not explicitly rely on peers to solve the problems for you. That is, productive collaboration is permitted, blatant copying is prohibited. After collaboration you must work through all problems independently without outside assistance. **If you submit correct work without understanding it, you have likely cheated.**

## Attendance and Make-Up Policy

Attendance is mandatory and particularly critical in the compressed summer format. Missing even one class session is equivalent to missing an entire week in a regular semester. Absences do not excuse missed work unless covered by university policy. Make-ups will be granted for [official university events or activities](#), [religious reasons](#), and for [pregnant and parenting students](#). Make-ups require documentation and advanced notification of at least one-week (when possible).

## Course AI Policy

Non-reasoning models are prohibited. Reasoning models (e.g. GPT-5.x, Gemini 3, etc) are permitted as outlined in this policy. In mathematics you must struggle with many problems and persist until you succeed. If your use of AI robs you of productive struggle, you will not learn the content well. Below are examples of appropriate uses of AI within the course.

- (Homework). You may use a reasoning model to identify and learn the skills needed to solve a problem, but you are responsible for solving the problem on your own. You should include phrases in your prompt that indicate the model should not spoil the solution to a problem.
- (Study). Reasoning models are an effective way to get new practice problems and answer some questions. The following prompt-stems may be helpful:
  - *Create a new version of this problem for me to practice. Show only the question first, then the answer section. Keep it in normal text—no code blocks or developer-style output.* GPT-5.x can accept uploaded images of problems (even hand-written) for use with this stem.
  - *As if I were your student, give me 5 practice problems on solving first-order linear differential equations using integrating factors. Show only the questions first, then an answer section. Keep it in normal text—no code blocks or developer-style output.* You can change the textbook section or number of problems.
  - *Here is my work on a problem. My solution isn't correct. Can you tell me where I went wrong?* You can include hand-written work for analysis. Be sure the full problem text is visible for analysis.

Use of AI in a manner not consistent with the above conditions should receive advanced approval from the course instructor to determine if it will hurt your mastery of the content. Use of AI during exams or to outright solve open homework problems is strictly prohibited. Students are also bound by the University [Artificial Intelligence Statement](#) (see p.7).

## Student Resources

### Resources to assist you in the course

- [UT Tyler Student Accessibility and Resource \(SAR\) Office](#) (provides needed accommodations to students with document needs related to access and learning)
- [UT Tyler Writing Center](#)
- [The Mathematics Learning Center](#)
- [UT Tyler PASS Tutoring Center](#)
- [UT Tyler Supplemental Instruction](#)
- [Upswing \(24/7 online tutoring\) - covers nearly all undergraduate course areas](#)
- [Robert Muntz Library](#) and [Library Liaison](#)
- [Canvas 101](#) (learn to use Canvas, proctoring, Unicheck, and other software)
- [Digital Support Toolkit](#) (for supported courses only. Students are automatically enrolled in the toolkit for supported courses)
- [LIB 422 – Computer Lab](#) where students can take a proctored exam
- [The Career Success Center](#)
- [UT Tyler Testing Center](#)
- [Office of Research & Scholarship Design and Data Analysis Lab](#)

### Resources available to UT Tyler Students

- [UT Tyler Counseling Center](#) (available to all students)
- [MySSP App](#) (24/7 access to Student Support Program counseling through phone or chat and online wellness resources available in a variety of languages)
- [Student Assistance and Advocacy Center](#)
- [Military and Veterans Success Center](#) (supports for our military-affiliated students)
- [UT Tyler Patriot Food Pantry](#)

- [UT Tyler Financial Aid and Scholarships](#)
- [UT Tyler Student Business Services](#) (pay or set up payment plans, etc.)
- [UT Tyler Registrar's Office](#)
- [Office of International Programs](#)
- [Title IX Reporting](#)
- [Patriots Engage](#) (available to all students. Get engaged at UT Tyler.)

## University Policies and Information

### Withdrawing from Class

Students may [withdraw](#) (drop) from this course using the [Withdrawal Portal](#). Withdrawing (dropping) this course can impact your Financial Aid, Scholarships, Veteran Benefits, Exemptions, Waivers, International Student Status, housing, and degree progress. Please speak with your instructors, consider your options, speak with your advisor, and visit the One-Stop Service Center (STE 230) or email [enroll@uttyler.edu](mailto:enroll@uttyler.edu) to get a complete review of your student account and the possible impacts to withdrawing. We want you to make an informed decision. UT Tyler faculty and staff are here for you and often can provide additional support options or assistance. Make sure to carefully [read the implications for withdrawing from a course and the instructions](#) on using the [Withdrawal portal](#).

**Texas law prohibits students from dropping more than six courses during their entire undergraduate career\***. The six courses dropped includes those from other 2-year or 4-year Texas public colleges and universities. Consider the impact withdrawing from this class has on your academic progress and other areas, such as financial implications. We encourage you to consult your advisor(s) and Enrollment Services for additional guidance.

- **CAUTION 1:** Withdrawing before census day does not mean you get a full refund. Please see the [Tuition and Fee Refund Schedule](#).
- **CAUTION 2:** All international students must check with the [Office of International Programs](#) before withdrawing. All international students are required to enroll full-time for fall and spring terms.
- **CAUTION 3:** All UT Tyler Athletes must check with the Athletic Academic Coordinator before withdrawing from a course.
- **CAUTION 4:** All veterans or military-affiliated students should consult with the Military and [Veterans Success Center](#).

*\* Students who began college for the first time before 2007 are exempt from this law.*

### Artificial Intelligence Statement

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information

you submit. Misusing AI tools that violate the guidelines specified for this course is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy. Refer to the syllabus [Course AI Policy](#) for the guidelines for this course.

### **Final Exam Policy**

Final examinations are administered as scheduled. If unusual circumstances require that special arrangements be made for an individual student or class, the Dean of the appropriate college, after consultation with the faculty member involved, may authorize an exception to the schedule. Faculty members must maintain student final examination papers for a minimum of three months following the examination date.

### **Incomplete Grade Policy**

If a student, because of extenuating circumstances, is unable to complete all of the requirements for a course by the end of the semester, then the instructor may recommend an Incomplete (I) for the course. The "I" may be assigned in place of a grade only when all of the following conditions are met: (a) the student has been making satisfactory progress in the course; (b) the student is unable to complete all coursework or final exam due to unusual circumstances that are beyond personal control and are acceptable to the instructor, and (c) the student presents these reasons before the time that the final grade roster is due. The semester credit hours for an Incomplete will not be used to calculate the grade point average.

The student and the instructor must submit an Incomplete Form detailing the work required and the time by which the work must be completed to their respective department chair or college dean for approval. The time limit established must not exceed one year. Should the student fail to meet all of the work for the course within the time limit, then the instructor may assign zeros to the unfinished work, compute the course average for the student, and assign the appropriate grade. If a grade has yet to be assigned within one year, then the Incomplete will be changed to an F, or NC. If the course was initially taken under the CR/NC grading basis, this may adversely affect the student's academic standing.

### **Grade Appeal Policy**

Disputes regarding grades must be initiated within sixty (60) days from the date of receiving the final course grade by filing a Grade Appeal Form with the instructor who assigned the grade. A grade appeal should be used when the student thinks the final course grade awarded does not reflect the grades earned on assessments or follow the grading scale as documented in the syllabus. The student should provide the rationale for the grade appeal and attach supporting document about the grades earned. The form should be sent via email to the faculty member who assigned the grade. The faculty member reviews the rationale and supporting documentation and completes the instruction section of the form. The instructor should return the form to the student, even if a grade change is made at this level. If the student is not satisfied with the decision, the student may appeal in writing to the Chairperson of the department from which the grade was issued. In situations where there is an allegation of capricious grading, discrimination, or unlawful actions, appeals may go beyond the Chairperson to the Dean or the Dean's designee of the college from

which the grade was issued, with that decision being final. The Grade Appeal form is found in the [Registrar's Form Library](#).

**NOTE:** The Grade Appeal Form is different from the Application for Appeal form submitted to the Student Appeals Committee, which does not rule on grade disputes as described in this policy.

### **Disability / Accessibility Services**

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA), the University of Texas at Tyler offers accommodations to students with learning, physical, and/or psychological disabilities. If you have a disability, including a non-visible diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or a history of modifications or accommodations in a previous educational environment, you are encouraged to visit <https://hood.accessiblelearning.com/UTTyler/> and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact you when your application has been submitted and an appointment with the Assistant Director Student Accessibility and Resources/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <https://www.uttyler.edu/disability-services>, visit the SAR office located in the Robert Muntz Library, LIB 460, email [saroffice@uttyler.edu](mailto:saroffice@uttyler.edu), or call 903.566.7079.

### **Military Affiliated Students**

UT Tyler honors the service and sacrifices of our military-affiliated students. If you are a student who is a veteran, on active duty, in the reserves or National Guard, or a military spouse or dependent, please stay in contact with your faculty member if any aspect of your present or prior service or family situation makes it difficult for you to fulfill the requirements of a course or creates disruption in your academic progress. It is important to make your faculty member aware of any complications as far in advance as possible. Your faculty member is willing to work with you and, if needed, put you in contact with university staff who are trained to assist you. The [Military and Veterans Success Center \(MVSC\)](#) has campus resources for military-affiliated students. The MVSC can be reached at [MVSC@uttyler.edu](mailto:MVSC@uttyler.edu) or via phone at 903.565.5972.

### **Students on an F-1 Visa**

To remain in compliance with Federal Regulations requirements you must do the following:

- Traditional face-to-face classes: Attend classes on the regular meeting days/times.
- Hybrid Classes: Attend all face-to-face classes convened by the instructor according to the schedule set for your specific course.
- Online course: Only one online course can count toward your full-time enrollment. Students are expected to be fully engaged and meet all requirements for the online course.

### **Academic Honesty and Academic Misconduct**

The UT Tyler community comes together to pledge that “Honor and integrity will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.” Therefore, we enforce the [Student Conduct and Discipline](#) policy in the Student Manual Of Operating Procedures (Section 8).

## **FERPA**

UT Tyler follows the Family Educational Rights and Privacy Act (FERPA) as noted in [University Policy 5.2.3](#). The course instructor will follow all requirements to protect your confidential information.

## **Absence for Official University Events or Activities**

This course follows the practices related to [Excused Absences for University Events or Activities](#) as noted in the Catalog.

## **Absence for Religious Holidays**

This course follows the practices related to [Excused Absences for Religious Holy Days](#) as noted in the Catalog.

## **Absence for Pregnant Students**

This course follows the requirements of Texas Laws SB 412, SB 459, SB 597/HB 1361 to meet the needs of pregnant and parenting students. Part of the supports afforded pregnant students includes excused absences. Faculty who are informed by a student of needing this support should make a referral to the Parenting Student Liaison. NOTE: Students must work with the Parenting Student Liaison in order to receive these supports. Students should reach out to the Parenting Student Liaison at [parents@uttyler.edu](mailto:parents@uttyler.edu) and also complete the [Pregnant and Parenting Self-Reporting Form](#).

## **Campus Carry**

We respect the right and privacy of students who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at <http://www.uttyler.edu/about/campus-carry/index.php>.