

# SPRING, 2025

## Math 511. Ordinary Differential Equations

**When and Where::** MWF, 3:35 - 4:25 pm, McAllister 106

**Course Web page:** <https://reluga.org/511/>

**Instructor:** Timothy Reluga, treluga@psu.edu

**Office:** 424 McAllister

**Office hours:** Wednesday, 1:30-2:30 or by appointment.

**Course Description:** Ordinary differential equations are a core topic in mathematics, and are applied in every field of science and engineering to describe dynamics and geometry of systems. Math 511 provides beginning graduate students a survey of ordinary differential equations by reviewing undergraduate coursework and introducing more sophisticated solution techniques and analysis for the study of smooth dynamic systems.

**Prerequisite:** MATH 411 or MATH 412. Equivalently, calculus, linear algebra, matrices, and at least one semester of differential equations (ODEs).

**Grading:** Grades will be awarded based on regular homework assignments (40%), a midterm exam (30%), and a final exam (30%). Course grades will be assigned out of 100 points as follows:

A 100-95 A- 95-90 B+ 90-87 B 87-83  
B- 83-80 C+ 80-77 C 77-70 D 70-60 F 60-0

**Suggested Textbooks:** “Ordinary differential Equations with Applications”, 3rd edition, by Carmen Chicone, 2024 is an up-to-date reference for the course material, but is not required. Students are encouraged to seek out and read many references, so they may form their own perspectives on the course material.

**Homework:** Homework’s will generally consist of problem sets. Problem sets will be collected on Friday’s in class. I expect them to be readable.

**Course format:** There are three 50-minute lectures each week.

**Electronic aides:** NO electronics are allowed for exams. In some cases, symbolic computation tool use will be encouraged on homeworks, but keep in mind that you will be expected to reproduce such work on exams.

**Exams:** The midterm will tentatively be given March 7th in class, with a takehome portion due March 19th. The final exam will be given during finals week.

**Academic Integrity:**

Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. Academic integrity is a basic guiding principle for all academic activity at The Pennsylvania State University, and all members of the University community are expected to act in accordance with this principle. Consistent with this expectation, the University's Code of Conduct states that all students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts.

Academic integrity includes a commitment by all members of the University community not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others.

All Penn State and Eberly policies regarding academic integrity apply here. See [www.campuses.psu.edu/university-college-academic-integrity-procedures](http://www.campuses.psu.edu/university-college-academic-integrity-procedures)

**Disability Accommodation:**

In order to receive consideration for reasonable accommodations, you must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: See documentation guidelines ([www.equity.psu.edu/sdr/guidelines](http://www.equity.psu.edu/sdr/guidelines)). If the documentation supports your request for reasonable accommodations, your campus disability services office will provide you with an accommodation letter. Please share this letter with your instructors and discuss the accommodations with them as early as possible. You must follow this process for every semester that you request accommodations. For further information, please visit <http://equity.psu.edu/sdr/>.

**Counseling services:**

Many students at Penn State face personal challenges or have psychological needs that may interfere with their academic progress, social development, or emotional wellbeing. The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, crisis intervention, consultations, online chats, and mental health screenings. These services are provided by staff who welcome all students and embrace a philosophy respectful of clients' cultural and religious backgrounds, and sensitive to differences in race, ability, gender identity and sexual orientation.

- Counseling and Psychological Services at University Park (CAPS) (<http://studentaffairs.psu.edu/counseling/>): 814-863-0395
- Penn State Crisis Line (24 hours/7 days/week): 877-229-6400
- Crisis Text Line (24 hours/7 days/week): Text LIONS to 741741

**Educational Equity and Bias Reporting:**

Penn State seeks to foster a diverse and inclusive environment for students, faculty, and staff. Acts of intolerance, discrimination, or harassment due to age, ancestry, color, disability, gender, gender identity, national origin, race, religious belief, sexual orientation, or veteran status are not tolerated and can be reported through Educational Equity via the Report Bias page (<http://equity.psu.edu/reportbias/>).