



MATH 2320.02E – Differential Equations

COURSE SYLLABUS: FALL- 2025

INSTRUCTOR INFORMATION

Instructor:	Dr. Pani Seneviratne, Professor of Mathematics
Office Location:	Education North, 115
Office Hours:	TR: 12:30 – 2:00 pm, W: 10:00 – 12:00 or by appointment
Office Phone:	903-886-5157 (Department of Mathematics)
Office Fax:	903-886-5945
University email:	padmapani.seneviratne@etamu.edu
Preferred Communication:	email
Response time:	within 24 hours during weekdays
Class Location:	BIN 330
Class Time:	TR 11:00 – 12:15 am

COURSE INFORMATION

Textbook: Elementary Differential Equations with Boundary Value Problems, previously published by Brooks/Cole Thomson Learning, 2000. Free download at <http://digitalcommons.trinity.edu/mono/9/>. Tentatively, we will cover Chapters 1, 2, 3.1, 5, 7.1-7.4, 8.1-8.3, and 10.1-10.4.

Student Solutions Manual for Elementary Differential Equations with Boundary Value Problems, previously published by Brooks/Cole Thomson Learning, 2000. <http://digitalcommons.trinity.edu/mono/10/>

Software: Instructor may use Mathematica/SageMath computer algebra systems for illustrations.

Calculator: TI 83/84 plus

The syllabus/schedule are subject to change.

Course Description

Ordinary differential equations, including linear equations, systems of equations, equations with variable coefficients, existence and uniqueness of solutions, series solutions, singular points, transform methods, and boundary value problems; application of differential equations to real-world problems. Prerequisites: MATH 2414 with a minimum grade of C.

Student Learning Outcomes: Upon successful completion of this course a student will be able to:

1. Classify differential equations into partial differential equations and ordinary differential equations, linear or nonlinear, homogeneous or non-homogenous, first order, second order or higher order differential equations.
2. Explain a general solution and a particular solution, an initial-value problem, the Existence and Uniqueness Theorem; Wronskian Determinants and fundamental 3 set of solutions; Explain Growth-Decay Model and Predator-and-Prey Model that use differential equations to model real world problems.
3. Use methods such as Separating Variables, Variation of parameters, Finding a Potential Function, Substitution and Euler's Method to solve 1st order differential equations for explicit solutions and approximation solutions.
4. Explain the solution structure of higher order linear differential equations and solve some higher order linear differential equations with constant coefficients, some second order linear differential equations with general coefficients, and some system of first order linear differential equations.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

Access MyLeo online.

Attendance and participation

Online attendance is required. Your log in, video viewing, homework and participation in our course in D2L determine online participation in this course.

Instructional Methods

In addition to standard teaching methods, a computer algebra system will be used to illustrate concepts interactively.

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GRADING

Final grades in this course will be based on the following scale:

Midterm Exams:	180 points
Quizzes/projects:	100 points
Final Exam:	100 points
Class Participation	20 points

Total:	400 points

A = 90%-100%

B = 80%-89%

C = 70%-79%

D = 60%-69%

F = 59% or Below

Exams: There will be two midterm exams and a comprehensive final exam for this course.

Exam 1: Thursday, September 25th 2025 (5th week).

Exam 2: Thursday, November 06th 2025 (11th week).

Final Exam: Tuesday December 9th, 10:30 – 12:30 pm

Home work/Quizzes: You are required to submit all homework problems, and projects on the due date.

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

The syllabus/schedule are subject to change.

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@etamu.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

You are expected to attend all classes.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

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University Specific Procedures

Student Conduct

Appropriate classroom behavior is required to attend this class.

All cell phones must be put on silent during class.

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum:

<https://www.britannica.com/topic/netiquette>

ETAMU Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

Academic Integrity

Students at East Texas A&M University are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other

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things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

East Texas A&M University

Waters Library- Room 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

Nondiscrimination Notice

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in East Texas A&M University buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and East Texas A&M University Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

ETAMU Supports Students' Mental Health

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The Counseling Center at East Texas A&M University, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.etamu.edu/counsel

AI use policy

East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

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Tentative Course Schedule:

Week 1 (August. 25 – 29): Syllabus, 1.1, 1.2, 1.3

Week 2 (Sep. 1 – 5): Labor Day, 2.1, 2.2

Week 3 (Sep. 8 – 12): 2.3, 2.4

Week 4 (Sep. 15 – 19): 2.5, 2.6, 3.1 7

Week 5 (Sep. 22 – 26): 5.1/9.1, Exam 1

Week 6 (Sep. 29 – Oct. 3): 5.2/9.2

Week 7 (Oct. 6 – 10): 5.3, 5.4, 5.5/9.3

Week 8 (Oct. 13 – 17): 5.6, 5.7

Week 9 (Oct. 20 – 24): 7.1, 7.2

Week 10 (Oct. 27 – 31): 7.2, 7.3

Week 11 (Nov. 3 – 7): 7.3, 7.4, 8.1 Exam 2

Week 12 (Nov. 10 – 14): 7.3, 7.3, 8.1

Week 13 (Nov. 17 – 21): 8.2, 8.3

Week 14 (Nov. 24 – 28): 10.1

Week 15 (Dec. 1 – 5): 10.2, 10.3, 10.4, Review for Final Exam

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