

# Differential Equations - Syllabus

MATH 324 Fall 2025

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<b>Instructor</b>	Megan Voss-Warner	<b>Email</b>	<a href="mailto:mv110@evansville.edu">mv110@evansville.edu</a>
<b>Course Meeting Days and Time</b>	T/Th 1:00-2:15 PM	<b>Student Drop-In Office Hours</b>	Monday 2:00-3:00 PM Tues, Wed, Thurs 8:30-11:30 AM
<b>Course Mode</b>	In-person Harlaxton	<b>Office Location</b>	Visiting Faculty Office

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## Course Information

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### Catalog Description:

Includes standard first- and second-order methods, systems, difference equations, power series, Laplace transforms, and numerical and nonlinear methods, with applications for all of these.

### Credit Hour Policy Statement:

This class meets the federal credit hour policy of 1 hour of class with an expected 2 hours of additional student work outside of class each week for approximately 15 weeks for each hour of credit, or a total of 45-75 total hours for each credit.

### Course Learning Outcomes:

By the end of this course, students will have knowledge of first-order DEs, direction fields, separable equations, linear equations, exact equations, linear and nonlinear models, initial-value problems, boundary-value problems, homogeneous equations, nonhomogeneous equations, the superposition approach for undetermined coefficients problems, power series solutions, difference equations, Laplace transforms and their inverses, and the use of such transforms for solving differential equations.

### Required Materials:

A First Course in Differential Equations with Modeling Applications, Tenth edition, by Dennis G. Zill ISBN: 978-1-111-82705-2

### Methods of Instructions:

Class will be delivered in-person. Students will learn theory and practice some problems in class, with the majority of practice being done outside of class through homework.

### Withdrawal and Attendance policies:

The last day to withdraw from the course without a W on a transcript is the 8<sup>th</sup> of September. The last day to withdraw from the course with a W is Friday, November 7<sup>th</sup>, 2025.

Harlaxton College expects regular class attendance by all students. Students are considered sufficiently mature to appreciate the necessity of regular and punctual attendance, to accept this

personal responsibility and to accept the consequences of failure to attend. When absences occur due to emergency or medical reasons, students are expected to notify their instructors of the absence prior to class or to seek the assistance of the College nurse or a member of the Student Experience Team for help in notifying instructors.

Instructors have the authority to grant excused absences for medical, psychological, or personal reasons upon review of appropriate documentation and professional recommendation supporting such a request. In the event of long-term illness, reasonable accommodations will be made to allow a student to complete a course. In these cases, the Dean will need to approve the long term nature of the accommodation.

The Dean of Harlaxton College has the authority to grant excused absences for medical, psychological, or personal reasons.

Each instructor is expected to maintain an attendance policy in keeping with the nature of the Harlaxton program and may consider it in evaluating performance in their courses.

### **Policy Governing Unexcused Absences:**

Harlaxton College operates an attendance policy that is binding on all faculty and students. The number of unexcused absences that are allowed before incurring a penalty is related to the number of times a class meets each week. For courses which meet three times a week, students are allowed a maximum of three unexcused absences during the semester without attracting penalty points. For courses meeting twice a week two such absences are permitted, and for courses meeting once a week a single absence is allowed. Additional unexcused absences will attract a grade penalty.

Each absence beyond the two allowed will result in a third-letter grade deduction (A- to B+).

### **Policy Governing Excused Absences.**

- Excused absences are not given to facilitate student travel independent of College-sponsored travel.
- Students may be permitted to miss class because of participation in academic field trips.
- Instructors must co-ordinate and confirm academic fieldtrips with the Dean, prior to the commencement of the Semester to ensure their inclusion in the Semester timetable.
- Where authorization for an academic fieldtrip is requested after the commencement of the semester, the request must be submitted to the Dean.

The following information is required:

- Purpose and brief description of the official Harlaxton event or academic fieldtrip.
- Dates, location, and times (as applicable).
- Alphabetical list of students involved [Last Name/First Name] along with their student identification number.

If approval is granted:

- Instructors affected will be notified at least one week prior to the class period during which absence is anticipated, or as soon as possible.

- Missed class time due to student participation is to be considered an excused absence.
- The grade of a student may not be lowered in any class due to excused absences.
- It is the student's responsibility - to take the initiative by consulting with their instructors before the absence occurs, and - to do what is required by the instructor to make up all missed assignments and/or examinations.
- Instructors are required to assist students in these occasional situations of excused absences.

### Grading Criteria:

Homework = 15%

Quizzes = 10%

Exams (3) = 25% each for 75% total

The grading scale is below. The minimum percentage required to get each letter grade is listed below the grade.

A	A-	B+	B	B-	C+	C	C-	D+	D	F
93.00	90.00	87.00	83.00	80.00	77.00	73.00	70.00	67.00	60.00	0

### Honor Code:

All students at the University of Evansville agree to the University honor code: *I will neither give nor receive unauthorized aid, nor will I tolerate an environment that condones the use of unauthorized aid.*

For MATH 324 homework, authorized aid is any tool or resource, including but not limited to: classmates, notes, textbooks, online resources, software, professors, or other humans/robots. You are encouraged to use tools available to you to learn the course material through the homework.

For MATH 324 tests and quizzes, authorized aid is your own brain, an approved equation sheet, and a calculator that is not connected to the internet.

### Course AI Policy:

AI may be used for homework, as it can be a useful tool for learning. However, it is recommended that AI be primarily used to check work and not to solve homework problems. If AI is doing the homework, what are you, the student, doing to practice the concepts learned in this course? You won't be prepared for exams, which make up the majority of your final grade.

### Course Schedule:

In addition to the listed exams, students can expect daily homework assignments to practice concepts learned in class.

Class #	Date	Day	Topic	Book
1	9/2	T	Intro to Differential Equations and Definitions	1.1
2	9/4	Th	Definitions and Initial Value Problems	1.2
3	9/9	T	DEs as mathematical models	1.3
4	9/11	Th	Direction Fields and Autonomous DEs	2.1
5	9/16	T	Separable Equations	2.2

6	9/18	Th	Separable Equations	2.2
7	9/23	T	Linear Equations	2.3
8	9/25	Th	Exact Equations	2.4
9	9/30	T	Solutions by substitution	2.5
10	10/2	Th	A numerical method	2.6
11	10/7	T	Linear Models	3.1
12	10/9	Th	<b>Exam 1, chapters 1-2</b>	
13	10/14	T	Nonlinear Models	3.2
14	10/16	Th	Preliminary Theory with Linear Equations	4.1
	10/21	T	<i>Fall Break</i>	
	10/23	Th	<i>Fall Break</i>	
15	10/28	T	Reduction of Order	4.2
16	10/30	Th	Homogeneous Linear Equations with constant coefficients	4.3
17	11/4	T	Homogeneous Linear Equations with constant coefficients	4.3
18	11/6	Th	Undetermined coefficients with superposition	4.4
19	11/11	T	Variation of Parameters	4.6
20	11/13	Th	Cauchy-Euler Equation	4.7
21	11/18	T	Review of Power series	6.1
22	11/20	Th	<b>Exam 2, Chapters 3-4</b>	
23	11/25	T	Definition of the Laplace Transform	7.1
24	11/27	Th	Inverse Transforms and Transforms of Derivatives	7.2
25	12/2	T	Operational Properties II	7.3
26	12/4	Th	Operational Properties II	7.4
27	12/9	T	<b>Exam 3, Chapters 6-7, cumulative</b>	

### University Policy Statements

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#### Disability Policy:

The University of Evansville is committed to providing an accessible and supportive environment for students with disabilities. It is the policy and practice of the University of Evansville to make reasonable accommodations for students with properly documented disabilities. Students should contact Disability Services at 812-488-2663 to seek services or accommodations for disabilities. Written notification to faculty from Disability Services is required for academic accommodations.

#### Institutional Equity and Title IX

UE is committed to fostering an atmosphere free from harassment and creating an inclusive campus for all members of the University community regardless of their sex, sexual orientation, gender identity, race, religion, ethnicity, country of origin, ability, or veteran status. All Faculty members are considered Responsible Employees and required to report instances of discrimination, harassment, or sexual violence to the Office of Institutional Equity

You may also choose to speak to a Confidential Resource about your experience. Confidential Resources at the University include:

Counseling Services: 812-488-2663, [counselingservices@evansville.edu](mailto:counselingservices@evansville.edu)

Crayton E. and Ellen Mann Health Center: 812-488-2033, [healthcenter@evansville.edu](mailto:healthcenter@evansville.edu)

Spiritual Formation Coordinator: 812- 488-5265, [spiritualformation@evansville.edu](mailto:spiritualformation@evansville.edu)

If you or someone you know has been harassed, assaulted, or discriminated against you can find the appropriate resources by contacting the Assistant Director of Institutional Equity and Title IX Coordinator: email [titleix@evansville.edu](mailto:titleix@evansville.edu) ; phone (812) 488-5261. For more information visit <https://www.evansville.edu/offices/titleix/policy.cfm> .

### **Non-discrimination Statement**

The University of Evansville expects all members of its community to treat each other with respect and civility. Harassing behaviors directed towards any member of our community will not be tolerated. As part of its commitment to non-discrimination, the University specifically prohibits harassment based on any other characteristics set forth in its nondiscrimination statement as follows: including race, color, gender, gender identity and expression, sexual orientation, creed or religion, national origin, age, disability, veteran status and all federally protected groups/classes. Any form of harassment undermines the mission of the University and negatively impacts the University community as a whole. For more information contact the [Center for Inclusive Excellence](#).

### **Campus Safety**

All members of the UE community are automatically enrolled in the Ace Alerts Emergency Alert System. When the system is activated, emergency notification information is sent in the following manner: calls to campus IP phones, text messages, emails, campus housing speaker system, active threat sirens (non-weather related), digital signage, and AlertUS desktop on campus-owned computers.

**To contact the Office of Public Safety:**

**Emergencies:** 812-488-6911

**Non-emergencies:** 812-488-2051

### **Complaints, Grievances, and Appeals**

The University of Evansville seeks to resolve all student concerns in a timely and effective manner through policies and processes documented in the University [Course Catalog](#) and [Student Handbook](#).

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### **Student Resources.**

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Access the links below to connect with departments and resources that are here to support all UE students.

**Academic Services:** Contact the Center for Academic Advising to connect with academic support services including supplemental instruction, tutoring, and time management and study skills help.

**Blackboard Guides:** Blackboard is the University of Evansville's course management system for online courses. Guides on using Blackboard can be found within [MyUE](#).

**Counseling Services:**. Counseling Services provides general, short-term counseling that assists students in identifying barriers and setting goals while improving coping strategies to achieve personal and academic goals.