# Syllabus for MATH 2310, Applied differential equations I, section 01

## Basic course information

- Number of credit hours: 3
- Semester and dates this course runs over: Spring 2024, January 16, 2024-May 3, 2024
- Course meeting times and location: Monday, Wednesday, Friday 9-9:50 AM, Agriculture building, room 41
- Prerequisite: grade of C (or S) or better in MATH 2205 (Calculus II)
- Required textbook: Boyce, William E., et al. *Elementary Differential Equations and Boundary Value Problems*. United Kingdom, Wiley, 2021.
- Other required tool: For homework assignments we will use the online tool WebWork.

## Course description

The main purpose of this course is to explore techniques for solving first order and higher order linear ordinary differential equations while emphasizing the applied (physical, ecological, etc.) nature of such equations. The desired outcome for a student in this course is for the student to be able to look at a differential equation and identify what type of equation it is and what solution techniques work for such a type and then solve the equation.

## Instructor contact information


- Name: Vincent Ruzicka, or just Vince
- Institutional email: vruzicka@uwyo.edu
- Office location: Ross Hall, room 245
- Office hours: TBD or by appointment

## Course expectations

Students are expected to attend class, to participate in class, to have access to a copy of the required text, to read the sections of the required text to be covered in class that day prior to the start of class and to complete all homework assignments and exams in a timely manner.

## Homework, exams and grading

There will be approximately 13 homework assignments throughout the semester, which will make up 60% of one's grade. There will be one cumulative, in-class midterm exam, worth 10% of one's grade, and there will be a cummulative final exam, worth 30% of the grade. The date, time and location of the final exam is TBD. The following grading scale will be used in this course:

| Letter grade | Percentage |
|---|---|
| A | $\geq 90\%$ |
| B | $< 90\%$, $\geq 80\%$ |
| C | $< 80\%$, $\geq 70\%$ |
| D | $< 70\%$, $\geq 60\%$ |
| F | $< 60\%$ |

## Course schedule

The following schedule is tentative. The meaning of "Sect. x.y" is the textbook section we will cover that day, and "HW" stands for "homework".

### Week 1

Jan. 17: Go over syllabus, sect. 1.1
Jan. 19: Sect. 1.1, HW 1 assigned

### Week 2

Jan. 22: Sect. 1.2
Jan. 24: Sect. 1.3
Jan. 26: Sect. 2.1, HW 1 due, HW 2 assigned

### Week 3

Jan. 29: Sect. 2.2
Jan. 31: Sect. 2.3
Feb. 2: Sect. 2.4, HW 2 due, HW 3 assigned

## Week 4

Feb. 5: Sect. 2.5
Feb. 7: Sect. 2.5
Feb. 9: Sect. 2.6, HW 3 due, HW 4 assigned

## Week 5

Feb. 12: Sect. 2.7
Feb. 14: Sect. 2.8
Feb. 16: Sect. 2.8, HW 4 due, HW 5 assigned

## Week 6

Feb. 19: No class
Feb. 21: Sect. 2.9
Feb. 23: Sect. 3.1, HW 5 due, HW 6 assigned

## Week 7

Feb. 26: Sect. 3.2
Feb. 28: Sect. 3.2
Mar. 1: Sect. 3.3, HW 6 due, HW 7 assigned

## Week 8

Mar. 4: Sect. 3.4
Mar. 6: Sect. 3.5
Mar. 8: Sect. 3.6, HW 7 due

## Week 9

Mar. 11: No class
Mar. 13: No class
Mar. 15: No class

## Week 10

Mar. 18: Review chapter 3
Mar. 20: Review chapter 2
Mar. 22: In class exam, HW 8 assigned

## Week 11

Mar. 25: Sect. 3.7
Mar. 27: Sect. 3.7, 3.8
Mar. 29: Sect. 3.8, HW 8 due, HW 9 assigned

### Week 12

April 1: Sect. 4.1
April 3: Sect. 4.2
April 5: Sect 4.3, HW 9 due, HW 10 assigned

### Week 13

April 8: Sect. 4.4
April 10: Sect. 6.1
April 12: Sect. 6.2, HW 10 due, HW 11 assigned

### Week 14

April 15: Sect. 6.2
April 17: Sect. 6.3
April 18: HW 11 due, HW 12 assigned
April 19: No class

### Week 15

April 22: Sect. 6.4
April 24: Sect. 6.5
April 26: Sect. 6.6, HW 12 due, HW 13 assigned

### Week 16

April 29: Review chapter 6
May 1: Review chapter 4
May 3: Review chapter 3,2, HW 13 due

## Course policies and resources

For classroom behavior policy (like how to foster a positive learning environment for everybody, mobile device policy), classroom statement on diversity, academic dishonesty policy (UW Regulation 2-114), duty to report under Title IX and syllabus changes policies (the syllabus may change throughout the semester), see the "Classroom Climate & Conduct" link in the course shell. For information on disability support (like accommodations provided by University Disability Support Services) and other student resources, see the "Learning Tools" link in the course shell.