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M 391.01: Special Topics - Topics in Ordinary Differential Equations

Eric Chesebro

University of Montana, Missoula, eric.chesebro@mso.umt.edu

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M391 Topics in ODEs - Fall 2020

FA 302 at 9A

Instructor: Eric Chesebro (he/him/his)

Office: 308 Mathematical Sciences

Email: eric.chesebro@mso.umt.edu

Phone: x2687

Office hours: Send me an email to set up a ZOOM meeting.

Moodle

This site will contain all information on this sheet plus more. Homework assignments and other information pertinent to this course will be posted at this web site.

Text

We will use **Introduction to Differential Equations Using Sage** by David Joyner and Marshall Hampton. It is available through <https://muse.jhu.edu/book/72082>. See also your shared [UMbox](#) folder.

Focus

This differential equations course will have a focus on modeling of real problems and computation. By choosing Joyner and Hampton's text **Introduction to Differential Equations with SAGE**, we have taken a preference towards learning to use a computer to solve differential equations. The text makes a point of helping you learn how to do this. One goal is to help you feel empowered to use a computer to implement your mathematical questions. **SAGE** is a good choice because it is open source, free, and will continue to be available to you after you leave UM.

We will also use modeling activities from [SIMIODE](#) to help us engage in the learning process through a real-world modeling perspective.

Graded work

All graded work will be submitted electronically as **pdf** files. Generally, work will be uploaded to Moodle and graded work will be placed in your UMbox folder.

Exams

We will have two 50 minute 'in-class' midterm exams and a cumulative final exam. Midterms are tentatively scheduled for -- and --. If you have a legitimate schedule conflict with an exam let me know as early as possible. The final exam will be given according to the [Registrar's schedule](#). By enrolling in this course you agree that you will be present for the final exam at this time.

Homework

Written homework will be collected weekly.

Working hard on the homework is how you will succeed in this course, so please take the homework seriously. It is okay to work together with classmates on homework assignments, but you must write up your own solutions in your own words.

Activities

Often we will do modeling activities. These may be done in class or outside of class. Most often they will culminate with a write up which will be graded.

Calculators

You may use your favorite brand/model on homework, but hopefully you'll grow to prefer SAGE for calculations. Electronic devices will not be needed or allowed during exams.

Grading

- Midterms: 20% each
- Comprehensive Final: 30%
- Homework: 20%
- Activities: 10%

| | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| ≥ 93% | 90% | 87% | 83% | 80% | 75% | 70% | 65% | 62% | 58% | 55% | < 55% |
| A | A- | B+ | B | B- | C+ | C | C- | D+ | D | D- | F |

COVID-19

- Mask use is required within the classroom. View UM's face covering policy.
- Each student is provided with a Healthy Griz kit. We expect students to clean their personal work space when they arrive for class, and before they leave the classroom. Refill stations for cleaning supplies/hand sanitizer will be set up around campus - please learn where they are and use them.
- Classrooms may have one-way entrances and exits to minimize crowding. Students are discouraged from congregating outside the classroom before and after class.
- Drinking liquids and eating food (which requires mask removal) is strongly discouraged within the classroom.
- Stay home and contact the Curry Health Center at (406) 243-4330 if you feel sick and/or if exhibiting COVID-19 symptoms. If you are diagnosed with COVID-19, follow instructions for quarantine and contact your advisor so they can help you stay on track academically.
- Students, please remain vigilant outside the classroom and help mitigate the spread of COVID-19.

Guidelines and policies

University dates and deadlines

You should be aware of the important dates and deadlines posted by the [Registrar's Office](#).

Academic honesty

I take academic honesty very seriously and I will act on any transgressions that I notice. Misconduct is subject to an academic penalty in this course and/or a disciplinary sanction by the university. We all know that a record of academic misconduct is a very bad thing to have documented in your academic history. All students should be familiar with the [Student Conduct Code](#).

Disability modifications

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and [Disability Services for Students](#). If you think you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommasson Center 154 or call 406.243.2243. I will work with you and Disability Services to provide an appropriate modification.