**Syllabus for Math 337**

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| **Chris Curtis Associate Professor** | |
| **Lectures:** 13:00-13:50 MWF via Zoom | **Personal Webpage:** [Dorky Prof  (Links to an external site.)](https://cwcurtis.github.io/) |
| **Office Hours:**T 3-5, W 11-12 via Zoom and by Appointment | **Discord Room:**[337 Discord (Links to an external site.)](https://discord.gg/XnexZSYvjx) |
| **Jupyter Notebooks:** [Math 337 Notebooks and Data (Links to an external site.)](https://nbviewer.jupyter.org/github/cwcurtis/Math_337_Notebooks/tree/main/) | **E-mail:**[ccurtis@sdsu.edu](mailto:ccurtis@sdsu.edu) |
| **Zoom Link:** [Lecture/Office Hours (Links to an external site.)](https://sdsu.zoom.us/j/2065945962) |  |

**Prerequisites**: Math 151 and 254

**Textbook**: **Brannan and Boyce: Differential Equations: An Introduction to Modern Methods and Applications.** Wiley 2015. ISBN 978-1-118-53177-8

**Course Catalog Description:** integration of first-order differential equations, initial and boundary value problems for second order equations, series solutions and transform methods, regular singularities.

**Student Learning Outcomes:**  
At the end of this course students will be able to:

1. Solve many linear and nonlinear first and second order differential equations.
2. Understand some qualitative methods for interpreting differential equations.
3. Apply methods from differential equations to solve problems from various fields of science.
4. Perform a geometric analysis to systems of differential equations.
5. Use NumPy and Jupyter Notebooks to study the dynamics of a variety of applications.
6. Interpret graphs from dynamical systems.
7. Apply power series techniques to find the solutions of differential equations
8. Apply Laplace transforms to solve a class of differential equations.

**Rest Days:**  
We will not have class, assignments, or any real work over the following days:

1. Friday, February 12 (de facto three day weekend)
2. Monday, March 8 (de facto three day weekend)
3. Tuesday, March 30 (note, Cesar Chavez Day is the following day)
4. Thursday, April 15

**Exam Days:**  
The three midterms will be in class on the following Fridays

1. Friday, February 26
2. Friday, March 26
3. Friday, April 23

**Group Work Due Dates:**  
There are seven group work assignments. They are due on the following Fridays.

1. Friday, January 29
2. Friday, February 19
3. Friday, March 5
4. Friday, March 19
5. Friday, April 2
6. Friday, April 16
7. Friday, April 30

**Course Objectives and Expectations on Students:**

This course is a 3 unit course designed for students who are majoring in mathematics and is considered one of the core fields of applied mathematics. This course is required for a number of the upper division courses in dynamical systems.

Differential equations date back to the studies of Newton and Leibnitz, where the subject of Calculus was developed. The basis of Newtonian physics is the study of motion, which is described by differential equations. Differential equations are central to many sciences, as they describe physical phenomena, such as velocity, rates of reaction, and growth. Thus, differential equations are centered around applications, so key to our studies in dynamical systems at SDSU.  
  
**Scope and Purpose of the Course:**

The scope and purpose of this course is being developed.  
  
**Course Assessment and Grading**

**Grading:**

* Gradescope work (25%)
* Group work (25%)
* 3 Midterms (27%)
* Final (23%) - May 7 (13:00-15:00)

The grade divisions are**typically** **85-100** is an **A**, **73-85** is a **B**, **62-73** is a **C**, **50-62** is a **D**, and **below 50**is an **F** with + or - assigned near the boundary (within 3%).

**Accommodation Of Disability:** Students with disabilities who may need academic accommodations should notify the professor in writing within the first two weeks of instruction. Students need appropriate forms aproved by SDS (Calpulli Center, Suite 3101). All information will be kept confidential. Students that need evacuation assistance during campus emergencies should also meet with the instructor as soon as possible to assure the health and safety of all students. If you encounter a problem accessing anything in this course, please contact me as soon as possible. See [Student Ability Success Center  (Links to an external site.)](https://newscenter.sdsu.edu/student_affairs/sds/) for further information.

**Classroom Behavior And Student Code Of Conduct**

1. It is expected that students will conduct themselves within the standards outlined in the student code of conduct,  
   disciplinary procedure and student due process. Disciplinary action will be taken by the instructor as necessary. See more information at the [SDSU Student Ethical & Civic Responsibility Code (Links to an external site.)](http://newscenter.sdsu.edu/student_affairs/ethical.aspx?).
2. Students are expected to come to class in a timely manner, prepared for the day’s work. Full participation for the entire  
   class period in activities, class exercises and discussions is required.
3. Assignments are posted with a specific due date. It is the student’s responsibility to complete the assignment on time. No late work will be accepted unless prior arrangements have been made.
4. **Academic dishonesty** will result in a grade of zero for the assignment and will be reported to Academic Affairs. It may result in further disciplinary action. Academic dishonesty includes, but is not limited to, cheating, which includes unauthorized collaboration and plagiarism.
5. Missed Exams: Students will receive a ZERO for any missed exam, except for written/documented excuses (illness, personal/family crises, etc.).

**Other Course Policies**

* The instructor will make special arrangements for students with documented learning disabilities and will try to make accommodations for other unforeseen circumstances, *e.g*., illness, personal/family crises, etc. in a way that is fair to all students enrolled in the class. Please contact the instructor EARLY regarding special circumstances.
* Students are expected and encouraged to ask questions in class.
* Students are expected and encouraged to make use of office hours.