Instructor:	Dr. Adam Larios	**Email:** alarios@unl.edu
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	Office Hours: M,W,F, 9:30 am - 10:20 am, or by appointment	

Prerequisites: Math 106, 107, and 208. You are expected to know differentiation and integration techniques and to be familiar with vector fields and parameterized curves.

Textbook: Differential Equations, Computing and Modeling. Edwards and Penney, 4th Edition.

ACE Outcome 3: "Use mathematical, computational, statistical, or formal reasoning (including reasoning based on principles of logic) to solve problems, draw inferences, and determine reasonableness." Your instructor will provide examples, you will discuss them in class, and you will practice with numerous homework problems. The exams will test how well you've mastered the material. The final exam will be the primary means of assessing your achievement of ACE Outcome 3.

Contacting me: The best way to contact with me is by email, alarios@unl.edu. Please put [MATH 221/821] somewhere in the title and make sure to include your whole name in your email. Polite, courteous emails are appreciated; see my website for tips on email etiquette. My office is in Avery Hall, room 305, and my office hours are M,W,F, 9:30 am - 10:20 am. Drop-ins are welcome during these times. If you want to meet me at a different time, please email me in advance, and we will try to schedule a time to meet.

NOTE: Because of privacy rights, **I cannot discuss grades over email or telephone. Please do not email me asking about your grade. I will not be able to give you any information.** Of course, I am happy to discuss grades in my office.

Description: First and second-order methods for ordinary differential equations including: linear, separable, Laplace transforms, linear systems, and some applications.

Motivation: Differential equations lie at the heart of an extremely large number of natural phenomena. Our understanding of these equations and their solutions has yielded a massive amount of progress for the human race. Furthermore, the unsolved problems are enormously varied, rich, and challenging. Research in differential equations is found at the cutting edge of nearly every discipline in science and mathematics, and progress often requires cutting-edge mathematical tools and extreme computational power.

In this course, we will start at the beginning, and focus on the most basic differential equations, known as "ordinary differential equations" (ODEs). Even at this level, the equations involved are incredibly useful in modeling nature, and will require us to develop sophisticated and beautiful mathematics to handle them.

Homework: Homework is designed to help students understand the material and to prepare them for exams. Homework assignments will be posted on the website. The suggested exercises represent a minimal assignment. Some students may have to work additional exercises from the text to attain sufficient mastery of the material.