

M311 – Ordinary Differential Equations

Instructor Information:

Instructor: Javier Pérez Álvaro

Office: M301

Email: javier.perez-alvaro@mso.umt.edu

Office hours: See <http://www.umt.edu/people/perezalvaro> for up-to-date OH.

Course Description: In this course we will cover analytic solution techniques for first order differential equations (ODEs) and second order linear differential equations (including some series solution methods often used in Physics). We will also study numerical methods for constructing approximate solutions to ODEs, and qualitative methods for studying nonlinear systems, namely phase plane analysis. Modeling simple systems governed by ODEs will be introduced, along with the general analysis of linear systems of ODEs.

Recommended Textbook: Elementary Differential Equations, by W. E. Boyce, R. C. DiPrima.

Prerequisite: M273.

Grading:

Item	Percentage
Homework	20%
Exams (2)	50%
Final exam	30%

Grading will be done on the usual percentage scale, 90-100% A, 80-89 % B, etc.

Homework Assignments: Homework will be assigned and collected weekly. Please be neat and make sure we can find each problem easily (e.g. number them clearly). A computer or calculator may be used to aid with the calculations in the homework. We will use Matlab in class, which is widely available on campus. You are encouraged to work together on the assignments, but please write up the solutions individually. Please have your assignments stapled.

Exam Information: There will be two in-class exams and a final exam. The final exam will be cumulative with a slight emphasis on the material covered after the second test. Make-ups for an exam will not be given unless you have a valid excuse and you contact me prior to the exam.

Student Conduct: All students need to be familiar with the Student Conduct Code. You can find in the "A to Z Index" on the UM home page. All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University.

Accommodation: The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors and Disability Services for Students (DSS). If you think that

you may have a disability adversely affecting your academic performance, and you have not already registered with DSS, please contact DSS in Lommasson Center 154 or call 406.243.2243. I will work with you and DSS to provide an appropriate accommodation.

Important note: Announcements made in class are considered addenda to this syllabus. Make sure you stay informed as the progress of the class.