Rensselaer

Course Syllabus

Course Information

			MATH 2400	Section 0104
RPI SPRING 2023		4 cr		
Lecture	Sections1-4	MR	12NOON-1:20PM	LOW 4050
Recitation	Section 1	T	8:00AM-8:50AM	DARRIN 232
Recitation	Section 2	T	9:00AM-9:50AM	DARRIN 232
Recitation	Section 3	F	8:00AM-8:50AM	DARRIN 232
Recitation	Section 4	F	9:00AM-9:50AM	DARRIN 232

Course Website: http://lms.rpi.edu

Prerequisites or Other Requirements: MATH 1020 and some knowledge of matrices.

Instructor

Name	Office	Office Hours	Email Address
Dr. Elizabeth Kam	Amos Eaton 407	M 1:30PM–3:30PM R 10:45AM–11:45AM	kamw@rpi.edu

Teaching Assistant(s)

Name	Office	Office Hours	Email Address
Mr. Muhammad Khan	Amos Eaton 430	M 10:00AM–11:30AM R 4:00PM – 5:30PM	khanm7@rpi.edu

Course Description

This course focuses on first and second order differential equations, as well as their application to science and engineering. Solving skills and physical interpretation of solutions are emphasized. Special solving techniques such as Fourier series and Laplace transforms are included. Additional topics such as partial differential equations, nonlinear differential equations and stability are covered for practical application in science and engineering disciplines.

Course Text(s)

1. Introduction to Differential Equations 2nd Edition by Mark H. Holmes

Student Learning Outcomes

1. Students will be able to demonstrate the ability to solve special types of first order differential equations analytically.

2. Students will be able to demonstrate the knowledge of basic techniques solving special types of second order linear equations.
3. Students will be able to demonstrate the ability to compute the eigenvalues and corresponding eigenvectors of a square matrix.
4. Students will be able to demonstrate the knowledge of Fourier series and Laplace transforms.
5. Students will be able to demonstrate the ability to solve systems of first order linear equations.
6. Students will be able to demonstrate the knowledge of non-linear differential equations and stability.

Course Assessment Measures

Assessment		Learning Outcome #s
Homework	Weekly	1, 2, 3, 4, 5, 6
Quiz	Weekly	1, 2, 3, 4, 5, 6
Exam	Three	1, 2, 3, 4, 5, 6
Final Exam	One	1, 2, 3, 4, 5, 6

Grading Criteria

10% - Approximately 6 Quizzes
60% - Three Exams
15% - Homework
15% - Final Exam
Grading Policy
Grades would be assigned based on the averages of Homework throughout the semester (15%), 3 exams (3x20 points), quizzes during recitation class every week (10 points), and a final exam (15 points).

Attendance Policy

Class participants are strongly encouraged to attend lectures and recitations.

Other Course Policies

Homework Assignment
1. Online homework is assigned at every lecture and should be submitted on or before 11:59pm of the due date.
2. A late submission will be accepted up to three days after the deadline of homework submission date, with a 50% deduction of points.

Make-up Exam and Quiz
Class participants are required to write exams / quizzes on the assigned dates. Make-up exams / quizzes would be facilitated only when a written excuse from the Dean of Students Office or a medical doctor is provided.

Academic Integrity

Student-teacher relationships are built on trust. For example, students must trust that teachers have made appropriate decisions about the structure and content of the courses they teach, and teachers must trust that the assignments that students turn in are their own. Acts that violate this trust undermine the educational process. The Rensselaer Handbook of Student Rights and Responsibilities and The Graduate Student Supplement define various forms of Academic Dishonesty and you should make yourself familiar with these. In this class, all assignments that are turned in for a grade must represent the student's own work. In cases where help was received, or teamwork was allowed, a notation on the assignment should indicate your collaboration.

Integrity should be regarded as the number ONE priority in one's life. Academic Dishonesty is strictly prohibited in this course. All assignment turned in this course for a grade must represent student's own work. Violation of this policy may result in reduction of grade or a failing grade for this course.

No class materials are allowed to be uploaded by students to any websites due to copyright. Violation of this policy may result in a failing grade for this course and legal consequences.

Course Assessment

Assessment	Date	Grading Criteria
Homework	Throughout semester	15%
Exam 1	09 Feb	20%
Exam 2	16 Mar	20%
Exam 3	13 Apr	20%
Quiz	During recitation class	10%
Online Final Exam	TBA	15%

Grading Policy

Grades would be assigned based on the averages of Homework throughout the semester (15 points), 3 exams (20 points x 3), quizzes during recitation class every week (10 points) and A FINAL EXAM (15 points) in this course.

Percent (%)	Grade
90 or above	A
87-89	A-
83-86	B+
80-82	B
77-79	B-
73-76	C+
70-72	C
67-69	C-
63-66	D+
58-62	D
57 or below	F

Course Calendar

Week	Date	Chapter	Events
1	09, 12 Jan	1,2	No Quiz, No recitations
2	19 Jan	2	No Lecture on 16 Jan Recitations begin, Quiz 1
3	23, 26 Jan	2, 3	Quiz 2
4	30 Jan, 02 Feb	3	Quiz 3
5	06, 09 Feb	Revision	Exam 1 on 09 Feb, No Quiz
6	13, 16 Feb	3, Reduction of Order	No Quiz
7	21, 23 Feb	4	Recitations on Friday only, No Quiz
8	27 Feb, 02 Mar	5	Quiz 4
9		Spring Break	No Lectures, No Recitations
10	13, 16 Mar	Revision	Exam 2 on 16 Mar, No Quiz
11	20, 23 Mar	6	No Quiz
12	27, 30 Mar	6	Quiz 5
13	03, 06 Apr	7	Quiz 6
14	10, 13 Apr	Revision	Exam 3 on 13 Apr No Quiz
15	17, 20 Apr	7	No Quiz
16	24 Apr	7	No Recitations