SYLLABUS FOR PHYSICS 301
Differential Equations for Scientists and Engineers

Randolph College, Summer

PROFESSOR:
Katrin Schenk, PhD
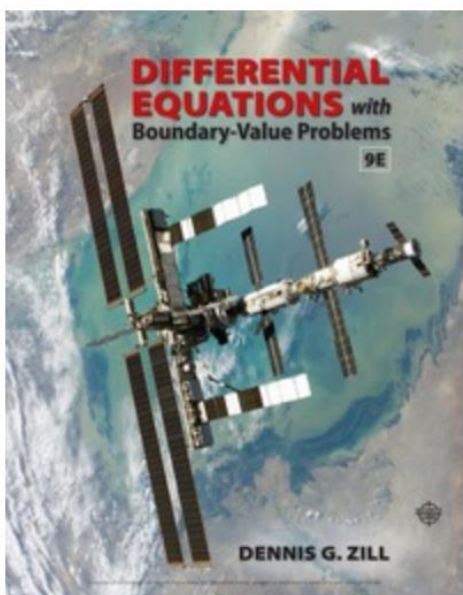Associate Professor of Physics and Astronomy
Office: Martin 324
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OFFICE HOURS:
I will have many office hours per week (Schedule TBA). In addition, you are welcome to call or text me at any (reasonable) hour!

READING MATERIALS:

Differential Equations with Boundary-Value Problems

by: Dennis G. Zill

Publisher: Cengage Learning
Print ISBN: 9781305965799, 1305965795
eText ISBN: 9781337515061, 133751506X
Edition: 9th
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OVERVIEW:
This course is a one-session, 3-credit course in differential equations for scientists and engineers.   We will cover the theory, formalism and applications of differential equations.

Week 1
Chapters 1 and 2
- Intro to Differential Equations
- First-Order Differential Equations

Week 2
Chapters 3 and 4
- Modeling with First-Order Differential Equations
- Higher Order Differential Equations

Week 3
Chapters 5 and 6
- Modeling with Higher-Order Differential Equations
- Series Solutions of Linear Equations

Week 4
Chapters 7 and 8
- Laplace Transform
- Systems of Linear First-Order Des

Week 5
Chapters 11 and 12
- Orthogonal Functions and Fourier Series
- Boundary Value Problems in Rectangular Coordinates

Online course information system: We will use Randolph College's Moodle system, https://moodle.randolphcollege.edu/, to post information about the course. The information on Moodle will include the all lectures, tests, and announcements. I expect you (within the first few days of class) to read and familiarize yourself with all the links on the Moodle course site. You will be expected to check Moodle regularly for announcements and course materials.

OFFICE HOURS:

I will have many hours per week for office hours. You can log into the Zoom video chat room for these hours. Schedule TBA.

LECTURES:
Lectures are posted on Moodle. Each week we will have 4 lectures, of varying lengths, each covering 2 chapters in your book.

HOMEWORKS AND TESTS:
There will be 2 Webassign homeworks each week. Homework assignments will be due on Wednesdays and Saturdays at midnight except for the first week where they will be due Thursday and Sunday at midnight. Late homeworks will not be accepted unless you get express permission from me.

There will be 3 tests, one on June 9th and June 23rd and the final exam that on July 1. The first two tests will in general not be cumulative but will include only material covered since the previous test. The final exam will be cumulative, however.

HONOR CODE:
Please note that all tests and homeworks in this class are pledged work under the Randolph College Honor Code. You can feel free to study with other students but your tests and homework assignments should be your work alone. If you have any questions about how the honor code applies in this class I will be happy to discuss it with you.

GRADING:
Course grades will be based on the final exam (35%), the two midterms (20% each), and homeworks (25%).

Students with a disability requiring special consideration: Students with disabilities needing accommodations in summer online classes at Randolph College may send any requests for accommodations and accompanying documentation to accessibility@randolphcollege.edu.
Students enrolled at other colleges or universities may submit current letters of accommodation from their home school. Students who are not

currently receiving accommodations and would like to inquire about receiving them in summer online classes at Randolph College can send any pertinent documentation or inquiries to the Coordinator of Disability Services at the email address listed above.