Course Syllabus

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Syllabus (and Calendar)

Wednesday [Monday], January 12
Lecture 1: Introduction. Integration Review (Section 1.1)

Thursday, January 13
Lecture 2: Basic Theory & Concepts. Classifying ODEs. Verifying Solutions (Section 1.2)

Friday, January 14
Lecture 3: Separable Equations. General and Particular Solutions (Sections 1.2, 2.2)

Tuesday, January 18
Lecture 4: Integrating Factors. First-Order Linear Equations (Section 2.1)
Discussion 1

Thursday, January 20
Lecture 5: Growth/Decay Phenomena (Section 2.3)

Friday, January 21
Lecture 6: Introduction to Second-Order Linear Equations (Section 3.1)

Monday, January 24
Lecture 7: Homogeneous Equations with Constant Coefficients – Real Roots (Section 3.4)

Tuesday, January 25
Lecture 8: Homogeneous Equations with Constant Coefficients – Complex Roots (Section 3.5)
Discussion 2

Thursday, January 27
Lecture 9: Linear Independence and the Wronskian (Section 3.2)

Friday, January 28
Lecture 10: Nonhomogeneous Equations (Section 3.6)

Monday, January 31
Lecture 11: Method of Undetermined Coefficients. Part 1 (Section 3.7)

Tuesday, February 1
Lecture 12: Method of Undetermined Coefficients. Part 2 (Section 3.7)
Discussion 3

Thursday, February 3

Lecture 13: Method of Variation of Parameters for Nonhomogeneous Equations (Section 3.8)

Friday, February 4

EXAM I: Sections 1.1 to 3.7

Monday, February 7

Lecture 14: Mechanical Systems and Harmonic Motion (Section 3.9)

Tuesday, February 8

Lecture 15: Problems on Simple Harmonic Motion (Section 3.9)

Discussion 4

Thursday, February 10

Lecture 16: Unforced Damped Vibrations (Section 3.10)

Friday, February 11

Lecture 17: Forced Vibrations (Section 3.11)

Monday, February 14

Lecture 18: The Laplace Transform - Definition and Basic Properties (Section 5.1)

Tuesday, February 15

Lecture 19: The Laplace Transform – More Properties (Section 5.2)

Discussion 5

Thursday, February 17

Lecture 20: The Inverse Laplace Transform (Section 5.3)

Friday, February 18

Lecture 21: Solving Initial-Value Problems with the Laplace Transform. Part 1 (Section 5.4)

Monday, February 21

Lecture 22: Solving Initial-Value Problems with the Laplace Transform. Part 2 (Section 5.4)

Tuesday, February 22

Lecture 23: Step Functions and Delayed Functions (Section 5.5)

Discussion 6

Monday, February 28

Lecture 24: Laplace Transform of Delayed Functions (Section 5.5)

Tuesday, March 1

Lecture 25: Solving Initial-Value Problems with Discontinuous Functions (Section 5.6)

Discussion 7