Tentative Course Schedule

Week	Day	Date	Topics	Practice Problems
1	M	1/11	§1.1 Introduction to Ordinary Differential Equations..... §1.2 The Definite Integral and the Initial-Value Problem §1.2.1 The Initial-Value Problem and the Indefinite Integral §1.2.2 The Initial-Value Problem and the Definite Integral	pp. 11–12, Odd 1–21.
	W	1/13	§1.3 First-Order Separable Differential Equations..... §1.6 First-Order Linear Differential Equations ..... §1.6.1 Form of the General Solution..... §1.6.2 Solutions of the Homogeneous etc.	pp. 17–19, Odd 1–33; p. 41, Odd 1–17.
	F	1/15	§1.6.3 Integrating Factors for First–Order Linear Diff. Eqs.	pp. 45–46, Odd 19–29.
2	M	1/18	**Martin Luther King Day**	
	W	1/20	§1.6.3 Integrating Factors for First-Order Linear Diff. Eqs.	pp. 46–47, Odd 35–45.
	F	1/22	Review: (There are solution procedures for separable first-order differential equations and for linear first-order differential equations.) **Quiz–1**.	
3	M	1/25	§1.7 Linear First-Order Differential Equations ..... . with Constant Coefficients and Constant Input..... §1.7.1 Homogeneous Linear Diff. Eqs. with Constant Coeffs. §1.7.2 Const. Coeff. Linear Diff. Eqs. with Const. Input §1.7.3 Const. Coeff. Lin. Diff. Eqs. with Exponential Input	pp. 55–59, ... Odd 1–51 and ..... Odd 57–61.
	W	1/27	§2.1 General Solution of Second-Order Linear Diff. Eqs.	p. 100, Odd 1–7.
	F	1/29	§2.2 Initial-Value Problem for Homogeneous Equations..... §2.3 Reduction of Order	pp. 105–106, ... 1, 3, 11, 13, 15.
4	M	2/1	§2.3 Reduction of Order	pp. 111–112, Odd 1–19
	W	2/3	§2.4 Homogeneous Linear Constant-Coefficient Differential ..... Equations (Second Order)	pp. 120–121, Odd 1–33
	F	2/5	§2.4 Homogeneous Linear Constant-Coefficient Differential ..... Equations (Second Order) — (continued)..... §2.6 The Method of Undetermined Coefficients	pp. 120–121, Odd 1–33
5	M	2/8	§2.6 The Method of Undetermined Coefficients	pp. 155–158, Odd 1–51
	W	2/10	§2.6 The Method of Undetermined Coefficients	
	F	2/12	**Examination–1**	
6	M	2/15	§2.9 Euler Equation	pp. 183–184, Odd 1–11
	W	2/17	§2.10 Variation of Parameters	pp. 192–193, Odd 1–17
	F	2/19	§3.1 Definition of Laplace Transform and Basic Properties	
7	M	2/22	§3.1.1 The Shifting Theorem	pp. 206–209, Odd 1–73
	W	2/24	§3.1.2 Derivative Theorem	p. 212, Odd 81–99
	F	2/26	Review, **Quiz–2**.	
8	M	2/29	§3.2 Inverse Laplace Transform	pp. 222–225, Odd 1–67
	W	3/2	§3.2 Inverse Laplace Transform (continued)	
	F	3/4	§3.3 Initial-Value Problems for Differential Equations	p. 233, Odd 1–27
9	M	3/9	§4.2 Introduction to Linear Systems of Diff. Eqs. ..... §4.2.1 Solving Linear Systems Using Eigenvalues and Etc. §4.2.2 Solving Linear Systems if the Eigenvalues are Real..... .....and Unequal	pp. 284–285, Odd 1–15 pp. 285–286, 19, 23, 25 27, 29, 35, 37, 39, 43
	W	3/9	§4.2.3 Finding General Solutions of Linear Systems..... .....in the Case of Complex Eigenvalues	pp. 285–286, 17, 21, 31, 33, 41, 45, 47, 49
	F	3/11	**Examination–2**	
			See next page for Weeks 10, 11, 12, 13, 14, and 15.	

Continuation of Tentative Course Schedule

Week	Day	Date	Topics	Practice Problems
10	M	3/14	§4.2.5 General Solution of a Linear System if the Two ..... Eigenvalues are Equal (and thus are repeated real roots) §4.2.6 Eigenvalues and Trace and Determinant	
	W	3/16	§4.3.1 Introduction to the Phase Pane for Linear Systems §4.3.2 Phase Plane for Linear Systems..... §4.3.3 Real Eigenvalues	(Mathematica for 1, 3, and 5 of page 312) ..... p. 312, 7, 13, 15, 17, 21
	F	3/18	Review, **Quiz-3**	
11	M	3/21	.....**Spring Break**	
	W	3/23	.....**Spring Break**	
	F	3/25	.....**Spring Break**	
12	M	3/28	§4.3.3 Real Eigenvalues; §4.3.4 Complex Eigenvalues	pp. 313–214, Odd 7–35
	W	3/30	§5.1 First-Order Differential Equations..... §5.2 Equilibria and Stability	pp. 321–322, Odd 1–15
	F	4/1	§5.2 Equilibria and Stability,	pp. 321–322, Odd 1–15
13	M	4/4	§5.3 One-Dimensional Phase Lines	pp. 326–327, Odd 1–17
	W	4/6	§6.1 Introduction..... §6.2 Equilibria of Nonlinear Systems, Linear Stability..... .....Analysis of Equilibrium, and the Phase Plane.....	
	F	4/8	Review, **Quiz-4**	
14	M	4/11	§6.2.1 Linear Stability Analysis and the Phase Plane	
	W	4/13	§6.2.2 Nonlinear Systems: Summary, Philosophy,..... .....Phase Plane, Direction Field, Null Lines	pp. 348–349, Odd 1–11
	F	4/15	§6.2.2 Nonlinear Systems: Summary, Philosophy,..... .....Phase Plane, Direction Field, Null Lines	pp. 348–349, Odd 1–11
15	M	4/18	§6.4 Mechanical Systems..... ..... §6.4.1 Nonlinear Pendulum..... ..... §6.4.2 Linearized Pendulum	
	W	4/20	..... §6.4.3 Conservative Systems and the Energy Integral	
	F	4/22	Review	
			Final Examination: Monday, April 25, 9:45–11:45 a.m.	