Tentative Outline

Topic	Suggested Exercises
Chapter 1: Introduction to Differential Equations	
1.1: Basic Definitions and Terminology	1–39 odd
1.2: Initial Value Problems	1–27 odd, not 15
Chapter 2: First-Order Differential Equations	
2.1: Solution Curves Without a Solution	
2.2: Separable Equations	1–29 odd
2.3: Linear Equations	1–35 odd
2.4: Exact Equations	1–29 odd
2.5: Solutions by Substitutions	1–29 odd, 35
Chapter 3: Modeling with First-Order Differential Equations	
1.3: Differential Equations as Mathematical Models	
3.1: Linear Models	1–25 odd, 35–39 odd
3.2: Nonlinear Models	1–7 odd, 11, 15
Chapter 4: Higher-Order Differential Equations	
4.1: Preliminary Theory—Linear Equations	1–35 odd
4.2: Reduction of Order	1–19 odd
4.3: Homogeneous Linear Equations with Constant Coefficients	1–41 odd
4.4: Undetermined Coefficients—Superposition Approach	1–39 odd
4.6: Variation of Parameters	1–25 odd
4.7: Cauchy-Euler Equations	1–37 odd
Chapter 5: Modeling with Higher-Order Differential Equations	
5.1: Linear Models: Initial-Value Problems	1–39 odd
Chapter 6: Series Solutions of Linear Equations	
6.1: Review of Power Series	
6.2: Solutions About Ordinary Points	1–21 odd
Chapter 7: The Laplace Transform	
7.1: Definition of the Laplace Transform	1–37 odd
7.2: Inverse Transforms and Transforms of Derivatives	1–41 odd
7.3: Operational Properties I	1–31 odd, 37–69 odd
7.4: Operational Properties II	1–13 odd
7.5: The Dirac Delta Function	1–13 odd
7.6: Systems of Linear Differential Equations	1–13 odd
Chapter 8: Systems of Linear First-Order Differential Equations	
Appendix B: Matrices	1–5 odd, 25, 27, 47–55 odd
8.1: Preliminary Theory—Linear Systems	1–25 odd
8.2: Homogeneous Linear Systems	1–13 odd, 19–29 odd, 33–45 odd