

Math 212 Differential Equations

Tuesday August 23 <i>Workbook:</i> <i>Selwyn Hollis,</i> <i>"A Mathematica Companion for Differential Equations"</i>	Thursday August 25 <i>Introduction to Differential Equations</i> <i>amcDE</i>	Tuesday August 30 <i>Mathematical Models Based on Differential Equations</i> <i>Sections 1.1-1.2</i>	Thursday September 1 <i>Fundamental Concepts and Terminology</i> <i>Section 1.3</i>
September 6 <i>Solutions of First-Order Linear Equations</i> <i>Sections 2.1-2.2</i>	September 8 <i>Elementary Applications</i> <i>Section 2.3</i>	September 13 <i>Review Chapters 1-2</i> <i>Sections 1.1-2.3</i>	September 15 <i>Exam 1 Linear First-Order Equations</i> <i>Sections 1.1-2.3</i>
September 20 <i>Direction Fields Separable Equations</i> <i>Sections 3.1-3.2</i>	September 22 <i>Bernoulli Equations Reduction of Order</i> <i>Sections 3.3-3.4</i>	September 27 <i>quadratic drag de 3.5.1.4 Torricelli's law de 3.5.2.1</i> <i>Section 3.5</i>	September 29 <i>Taylor series amcde 4.1.1, 5 Picard iteration amcde 4.2.1</i> <i>Sections 4.1-4.2</i>
October 4 <i>equilibria de 4.3.1 trout de 4.4.2 deer de 4.4.5</i> <i>Sections 4.3-4.4</i>	October 6 <i>numerical methods de 4.5.5 phase planes de 4.6.13 Euler's method de 4.6.17</i> <i>Sections 4.5-4.6</i>	October 11 <i>competition amcde 5.2.2 spruce budworms amcde 5.3.1 draining tank amcde 5.5.2.1-2</i> <i>Sections 3.1-4.6</i>	October 13 <i>spring-mass de 5.1.5, 7 spring-mass amcde 6.1.2 Heun de 5.2.13</i> <i>Sections 3.1-4.6</i>
October 18 <i>Fall Break</i>	October 20 <i>pendulum amcde 6.2.1-2 linear operator de 5.3.15 solutions de 5.4.5, 11, 15</i> <i>Sections 5.1-5.2</i>	October 25 <i>Green's functions amcde 6.3.1, 3 Green's functions de 5.5.3, 5, 6</i> <i>Sections 5.3-5.4</i>	October 27 <i>power series de 5.6.3, 5, 7 power series amcde 6.6.3, 9, 14</i> <i>Sections 5.5-5.6</i>
November 1 <i>power series de 5.6.13, 27 Legendre polynomials de 5.7.1 Frobenius amcde 6.6.16, 19</i> <i>Section 5.7</i>	November 3 <i>exp shift de 6.2.3, 9, 11 linear systems amcde 7.2.3, 4 eigensystems amcde 7.3.3, 5</i> <i>Sections 6.1-6.2</i>	November 8 <i>complex solns de 6.4.3, 9, 13 autonomous amcde 7.4.6, 8, 9 matrix exp amcde 7.5.1, 3</i> <i>Sections 6.3-6.4</i>	November 10 <i>unforced vibs de 6.5.1, 12, 13 forced response de 6.6.5, 9 phase portraits amcde 7.6.3, 5</i> <i>Sections 6.5-6.6</i>
November 15 <i>beats de 6.6.12 animations amcde 6.4.4, 5 phase portraits amcde 7.6.11, 15</i> <i>Sections 5.1-6.6</i>	November 17 <i>transforms de 7.1.9, 17 partial fractions de 7.1.37, 39 ivps de 7.2.23, 39</i> <i>Sections 5.1-6.6</i>	November 22 <i>Heaviside de 7.3.33, 35, 36 periodic de 7.4.13, 15, 20</i> <i>Sections 7.1-7.2</i>	November 24 <i>Thanksgiving</i>
November 29 <i>Dirac de 7.5.9, 11, 13 impulses de 7.4.20</i> <i>Sections 7.3-7.4</i>	December 1 <i>convolution de 7.6.3, 7, 12 integral eqns de 7.6.13, 17 Green's function de 7.6.29</i> <i>Sections 7.5-7.6</i>	December 6 <i>Course Review</i>	<i>Text:</i> <i>Selwyn Hollis,</i> <i>"Differential Equations with Boundary Value Problems"</i>
Thursday, Dec 8 <i>Final Exam</i> 9-11 am in WL134 <i>Sections 1.1-7.6</i>	 <i>Math 212 Differential Equations</i> <i>TTh 9:30-10:45</i> <i>Parrish, Fall 2005</i>	 <i>Grading Scheme:</i> <i>exams</i> <i>homework</i> <i>final exam</i> <i>total:</i>	 <i>points</i> 60 points 20 points 20 points 100 points