M244
Introduction to Ordinary Differential Equations
First Homework Set

Homework problems in the text that have a blue computer mouse next to them means that they should be done on a computer. For Sect. 1.1, try them by hand (think of fast ways of drawing the direction fields).

DATE	Homework
Sep 1	Section 1.1: 1,3,5, 7,8, 15-20, 22,23 Section 1.2: 1(a,b), 3, 8, 9, 15
Reading:	1. According to our authors, what is a differential equation? 2. What is a mathematical model? 3. What is a *solution* to a differential equation? 4. What is an *equilibrium* solution? 5. How does a direction field help us find a solution to a differential equation? 6. Our authors state that there is always a trade off between two things when modeling. What are they?
Sep 3 Reading	Sect 1.3: 1, 3, 5, 7, 9, 14, 15, 17, 19, 21, 25 Review Sheet- Integration Practice and Hyperbolics Be sure you understand the definitions below (for the HW): • ordinary (versus partial) differential equations • constants (or parameters) versus independent variable versus dependent variable. • order of a DE • linear (vs nonlinear) DE • linearization State the three important questions for a DE.
Sep 4	Sect 2.1: 1-7 odd, 13, 15, 16, 30, 35,3 6

DATE	Homework
Sep 8	Sect 2.2: 1-7 odd, 9, 11, 16, 20 p. 49: 31, 33, 35
Sep 10	Sect 2.3: 3, 5, 9, 12, 13, 23, 28
Sep 11	Finish 2.1-2.3, begin 2.4
Sep 15	Sect 2.4: 1, 3, 5, 7, 9, 13-15, 22-25 p. 77: 28, 29
Sep 17	Sect 2.5: 1, 3, 7, 8, 10, 11, 22, 23, 25, 26
Sep 18	Finish 2.4-2.5, begin 2.6
Sep 22	Sect 2.6: 1, 3, 4, 13, 15, 18, 19, 22
Sep 24	Review for Exam 1
Sep 25	Exam 1