

Math53: Ordinary Differential Equations Autumn 2004

Course Schedule

Key Dates

Midterm I	10/19 T	Midterm II	11/16 T	Final	12/6 M
PS1 due	10/4 M	PS2 due	10/11 M	PS3 due	10/18 M
PS4 due	11/1 M	PS5 due	11/8 M	PS6 due	11/15 M
PS7 due	11/22 M	PS8 due	12/2 R		

There will be an optional review session 4-6p.m. on Sunday, 12/5

Daily Schedule

<i>Date</i>	<i>Topic</i>	<i>Read</i>	<i>Comment</i>
9/27 M	Introduction	1.1-1.3,2.1	
9/28 T	First-Order Linear ODEs	2.4	
9/29 W	Separable ODEs	2.2,2.3	
9/30 R	Examples and Applications	2.5,3.1-3.4	
10/1 F	Qualitative Properties of First-Order ODEs	2.7,2.8	
10/4 M	Autonomous Equations	2.9	PS1 due
10/5 T	ODEs and Exact Differentials	2.6	
10/6 W	Review		
10/7 R	Second-Order ODEs	4.1,4.3	
10/8 F	Linear Homogeneous Equations with Constant Coefficients	4.3,4.4	
10/11 M	Qualitative Properties of Second-Order ODEs	4.1,4.2	PS2 due
10/12 T	Homogeneous and Inhomogeneous Equations		
10/13 W	Method of Undetermined Coefficients	4.5	
10/14 R	Variation of Parameters	4.6,4.7	
10/15 F	Examples		
10/18 M	Review		PS3 due
10/19 T	Midterm I, <i>location TBA</i>		Midterm I
10/20 W	Midterm I Recap		
10/21 R	Laplace Transform	5.1,5.2	
10/22 F	Inverse Laplace Transform	5.3	

10/25 M	ODEs and Laplace Transform	5.4	
10/26 T	Examples	5.5	
10/27 W	Convolution and the Delta Function	5.6,5.7	
10/28 R	Applications		
10/29 F	Review	5.8	
11/1 M	Review of Linear Algebra, I	7.1-7.4,7.6	PS4 due
11/2 T	Review of Linear Algebra, II	7.5,9.1	
11/3 W	Review of Linear Algebra, III	9.5	
11/4 R	Systems of ODEs	8.1,8.2	
11/5 F	Planar Linear Systems with Constant Coefficients	9.2,9.3	
11/8 M	Phase-Plane Portraits, I	9.2,9.3	PS5 due
11/9 T	Phase-Plane Portraits, II	9.2,9.5	
11/10 W	Higher-Dimensional Systems	9.4	
11/11 R	Inhomogeneous Linear Systems	9.8	
11/12 F	Qualitative Properties of Systems of ODEs	8.4,9.6,9.7	
11/15 M	Review		PS6 due
11/16 T	Midterm II, <i>location TBA</i>		Midterm II
11/17 W	Midterm II Recap		
11/18 R	Euler's Method	6.1	
11/19 F	Runge-Kutta Methods	6.2	
11/22 M	Linearization at Equilibrium	10.1	PS7 due
11/23 T	Examples	10.2	
11/24 W	Long-Term Behavior of Solutions	10.3	
11/25 R	<i>no class: Thanksgiving</i>		
11/26 F	<i>no class: Day after Thanksgiving</i>		
11/29 M	Examples	10.4	
11/30 T	Conserved Quantities	10.5	
12/1 W	Nonlinear Mechanics	10.6	
12/2 R	Review		PS8 due
12/3 F	Review		
12/6 M	Final Exam, 7-10p.m., <i>location TBA</i>		Final