

MA221 Schedule Summer 2009

Day	Topic	Section in text	Homework problems
18-May	Introduction, Types of Diff Eq., Classification	1.1, 1.2	-
19-May	Separable Eq., First order Lin eq., Integrating factor method	2.2, 2.3	Hwk1 (online)
	Exact equations, Special integrating factor for exact equations	2.4, 2.5	Page 65 ex: 4,6,8,16,20,26,30 Page 71 ex: 10,14,20 Hwk2 (due May 22)
20-May			
21-May	No classes - Commencement		
	Special methods for first order diff. eq.	2.6	Page 79 ex: 1-8, 12, 20, 24, 30 Hwk3 (due May 26)
22-May			
25-May	No classes – Memorial Day		
	Combining solutions for Linear equations. Linearly independent solutions	6.1	Page 349 ex: 10, 14, 18, 20, 32 Page 176 ex: 10, 16, 30, 44 Hwk4 (due May 28)
26-May			
27-May	Homogeneous Linear eq. with constant coeff. (order 2)	4.2	
	Homogeneous Linear eq. with constant coeff. (any order)	4.3, 6.2	Page 186 ex: 16, 24 Page 356 ex: 12, 20 Page 195 ex: 16, 22, 32 Page 201 ex: 28 Hwk5 (due June 1)
28-May			
	Non-homogeneous Linear eq (const coeff)	4.4, 4.5	
29-May	Method of undetermined coeff.		
	Non-homogeneous Linear eq (const coeff)	4.6	Page 206 ex: 10, 18 Page 214 ex: 12, 24(c),38, 46 Hwk6 (due June 3)
1-Jun	Method of variation of parameters		
2-Jun	Non-constant coefficients ODE's: Variable Coefficient Equations	4.7	
3-Jun	Review for test 1		

4-Jun	Test 1		
	Laplace transform: Definition and Properties	7.2, 7.3	Page 385 ex: 4, 12, 16, 22 Page 391 ex: 8, 10, 22, 25 Page 400 ex: 18, 26, 30 Hwk7 (due June 9)
5-Jun			
8-Jun	Laplace transform: Inverse transformation	7.4	
	Laplace transform: Solving Differential Equations	7.5	Page 409 ex: 8, 22, 26 Page 421 ex: 6, 8, 9, 36 Hwk8 (due June 11)
9-Jun			
10-Jun	Laplace Transform: Discontinuous and Periodic functions	7.6	
	Series methodology: Taylor expansion, Power series	8.1	Page 456 (ch 8.1) ex: 6, 8 Page 464 (ch 8.2) ex: 4,12,18,26,32 Hwk9 (due June 15)
11-Jun			
12-Jun	Series methodology: Analytic functions	8.2	
	Series methodology: Solving linear differential Eq	8.3	Page 475 (ch 8.3) ex: 10, 22, 26, 32 Page 482 (ch 8.4) ex: 4, 8, 18 Hwk10 (due June 17)
15-Jun			
16-Jun	Series methodology: Eq with analytic coeff, Cauchy Euler equations	8.4, 8.5	
	Series Methodology: The Frobenius method	8.6	Page 498 (ch 8.6) ex: 10, 20 Hwk11 (due June 18)
17-Jun			
18-Jun	Review for test 2		
19-Jun	Test 2		
	Eigenvalues, eigenfunctions for Differential equations	11.2	Page 697 (ch 11.2) ex: 16, 24, 28 Page 629 (ch 10.3) ex: 2,4,6,14 Page 637 (ch 10.4) ex: 6, 10,12 Hwk12 (due June 24)
22-Jun			
23-Jun	Fourier Series	10.3, 10.4	
	PDE's: Method of separation of variables	10.1, 10.2	Page 613 (ch 10.2) ex: 10, 16, 28 Page 650 (ch 10.5) ex: 2, 12
24-Jun			

			Hwk13 (due June 26)
25-Jun	Heat equation (parabolic)	10.5	
	Wave equation (hyperbolic)	10.6	Page 613 (ch 10.2) ex: 22
			Page 662 (ch 10.6) ex: 4, 8
			Page 675 (ch 10.7) ex: 2, 12
26-Jun			Hwk14 (due June 30)
29-Jun	Laplace equation (elliptic)	10.7	
30-Jun	Review for the Final exam		
6-Jul	Final Exam period		
7-Jul	Summer I		
8-Jul			
9-Jul			