

MATH 303 WINTER 2018

Date	Lectures	Tests	Homework due day
Jan 08 Mn	Introduction 1.1 Some Basic Mathematical Models; Direction Fields		
Jan 09 Tu	1.1-1.2 Solutions of Some D.E.s		
Jan 10 Wd	1.3 Classification of D.E.s		1.1: 3,8,9,12,15-20,21,23,25
Jan 11 Th	Review		
Jan 12 Fr	2.1 Linear Equations with Variable Coefficients		1.2: 1a,3,4,10,11abef,18// 1.3: 2,3,6,11,13,15,16,20,22,23,25
Jan 15 Mn	Holiday		Martin Luther King Jr Day
Jan 16 Tu	2.2 Separable Equations - Homogeneous Equations		
Jan 17 Wd	2.3(I) Modeling with First Order Equations		2.1: 6,7,15,28,31,33
Jan 18 Th	Review	Q1	
Jan 19 Fr	2.3(II) Modeling with First Order Equations	Q1	2.2: 4,7,15ac,17ac,21,25,27,30a-e,31ab// 2.3(I): 1,4,16,18
Quiz 1: Jan 18 – Jan 19 (Thu-Fri) on 1.1 – 2.2 in Testing Center			
Jan 22 Mn	2.4 Differences Between Linear and Nonlinear Equations		
Jan 23 Tu	2.5 Autonomous Equations and Population Dynamics		2.3(II): 20,21,22ab,28,31abd
Jan 24 Wd	2.6(I) Exact Equations and Integrating Factors		
Jan 25 Th	Review		
Jan 26 Fr	2.6(II) Exact Equations and Integrating Factors		2.4: 1,3,12,16,22,23,25,26,32 // 2.5: 3,5,7,11,12,18
Jan 29 Mn	3.1 Introduction to Second-Order Equations		2.6(I): 7,10,13,14 // 2.6(II): 19,21,22,24,27,31
Jan 30 Tu	3.2(I) Fundamental Solutions; Wronskian (Theory)		
Jan 31 Wd	3.2(II) Fundamental Solutions; Wronskian (Problems)		3.1: 7,14,25ac, 27
Feb 01 Th	Review	Q2	
Feb 02 Fr	3.3 (I) Basic Complex Numbers	Q2	
Quiz 2: Feb 1 – Feb 2 (Thu-Fri) on 2.3 – 2.6 in Testing Center			
Feb 05 Mn	3.3 (II) Complex Roots of the Characteristic Equation		
Feb 06 Tu	3.4 Repeated Roots; Reduction of Order		3.2(I): 3,10,18,19 // 3.2(II): 20,26,27,28,30,35,39
Feb 07 Wd	3.5 Nonhomogeneous Equations; M. of Undetermined Coefficients		
Feb 08 Th	Review		
Feb 09 Fr	3.6 Variation of Parameters		3.3: 3,8,12,17,21,24a,28,35 // 3.4: 1,8,11,16,20,26,28
Feb 12 Mn	3.7(I) Mechanical and Electrical Vibrations		3.5: 2,7,16,19,21a,23a
Feb 13 Tu	3.7(II) Mechanical and Electrical Vibrations		
Feb 14 Wd	3.8(I) Forced Vibrations	Test 1	3.6: 6,7,10,15,17,28,29 // 3.7(I): 6,7,11,17
Feb 15 Th	Review	Test 1	
Feb 16 Fr	Presentation	Test 1	
Test 1: Feb 14 – Feb 16 (Wed-Fri) on 1.1 – 3.6 in Testing Center			
Feb 19 Mn	Holiday		Presidents Day
Feb 20 Tu	3.8(II) Forced Vibrations		3.7(II): 19,20,24,29a // 3.8(I): 2,3,6,8abd,11
Feb 21 Wd	4.1 General Theory of nth Order Linear Equation		
Feb 22 Th	Review		3.8(II): 11,12,19a
Feb 23 Fr	4.2 Homogeneous Equations with Constant Coefficients		
Feb 26 Mn	5.1 Review of Power Series		4.1: 3,6,8,13,17,21,26,28 // 4.2: 6,8,12,17,31,37
Feb 27 Tu	5.2 Series Solutions near an Ordinary Point, Part I		
Feb 28 Wd	5.3 Series Solutions near an Ordinary Point, Part II		5.1: 3,14,17,24 //
Mar 01 Th	Review	Q3	
Mar 02 Fr	5.4 Euler Equations	Q3	
Quiz 3: Mar 1 – Mar 3 (Thu-Sat) on 3.3 – 4.2 in Testing Center			

Mar 05 Mn	6.1 Definition of Laplace Transform		
Mar 06 Tu	6.2 Solution of Initial Value Problems		5.2: 6,11,16a,19,21 // 5.3: 7,10,11,12
Mar 07 Wd	6.3 Step Functions		
Mar 08 Th	Review		5.4: 3,6,14,16,17,21 // 6.1: 4,5ab,6,7,13,22
Mar 09 Fr	6.4 Differential Equations with Discontinuous Forcing Functions		
Mar 12 Mn	6.5 Impulse Functions		6.2: 5,11,17,20,21,25,29,30 // 6.3: 4,13,19,24,29,32,36,37
Mar 13 Tu	6.6 The Convolution Integral		
Mar 14 Wd	Review: Characterization of Invertible Matrices. Eigenvalues and Eigenvectors		6.4: 9a,12a,18ab // 6.5: 6a,7a,12a,15,18
Mar 15 Th	10.1 Two-Point Boundary Value Problems		
Mar 16 Fr	Spring Break		
Mar 19 Mn	Review: Inner Product. Orthogonal Basis. Symmetric Matrices		
Mar 20 Tu	10.2 Fourier Series		6.6: 7,9,10,13,19 // 10.1: 3,6,11,14,18
Mar 21 Wd	10.3 The Fourier Convergence Theorem 10.4 Even and Odd Function	Test 2	
Mar 22 Th	Review	Test 2	
Mar 23 Fr	Presentation	Test 2	
Test 2: Mar 21 – Mar 23 (Wed-Fri) on 3.7 – 10.1 in Testing Center			
Mar 26 Mn	10.5 Separation of Variables; Heat Conduction in a Rod		
Mar 27 Tu	10.6 Other Heat Conduction Problems		10.2: 5,8,15,17,19abd,22abd // 10.3: 5a,15,17
Mar 28 Wd	10.7(I) The Wave Equation; Vibrations of an Elastic String		
Mar 29 Th	Review		
Mar 30 Fr	10.7(II) The Wave Equation; Vibrations of an Elastic String		10.4: 1,5,8,15,18,27ab,35 // 10.5: 1,5,7,10,22
Apr 02 Mn	10.8(I) Laplace's Equation		10.6: 1,3,7,9a,12abd,15 // 10.7: 1a,5a,9,13,16
Apr 03 Tu	10.8(II) Laplace's Equation		
Apr 04 Wd	7.1 Systems of 1 st Order ODEs 7.2 Review of Matrices (Students)		10.8(I): 1ab,5,7
Apr 05 Th	7.3 Systems of Algebraic Linear Equations (Students)	Q4	
	Review		
Apr 06 Fr	7.4 Basic Theory of Systems of First Order Linear Equations	Q4	
Quiz 4: Apr 5 – Apr 6 (Thu-Fri) on 10.2 – 10.8(I) in Testing Center			
Apr 09 Mn	7.5(I) Homogeneous Linear Systems with Constant Coefficients		
Apr 10 Tu	7.5(II) Homogeneous Linear Systems with Constant Coefficients		10.8(II): 8a,10,12ab,14ab // 7.1: 2,3,7ab,13,15,17,22,23
Apr 11 Wd	7.6 Complex Eigenvalues		7.2: 9,21,24,25 // 7.3: 13,15,16,22,29
Apr 12 Th	Review		
Apr 13 Fr	7.8 Repeated Eigenvalues		7.4: 3,4,6,7 // 7.5 (I): 3a,5a,17,26,29,31
Apr 16 Mn	7.7 Fundamental Matrices		7.5(II): // 7.6: 5a,17,20,23
Apr 17 Tu	7.9 Nonhomogeneous Linear Systems		
Apr 18 Wd	Review. Last Day of Classes		7.8: 2c,5,7a,11a
Apr 19 Th	Reading Day		7.7-7.9 Not due but you are responsible for this. To be evaluated in Final Exam
Apr 20 Fri - Apr 25 (Fri- Wed)		FINAL	Comprehensive