Daily Schedule for MATH 4340

January

Monday	Tuesday	Wednesday	Thursday	Friday
		12 **Welcome and course overview**	**13**	(32:49) **14** **Lecture 1.1** Vector spaces
17 ***No class: MLK Day***	**18**	(46:33) **19** **Lecture 1.2** Linear independence & spanning sets	**20**	(41:08) **21** **Lecture 1.3** Linear maps HW 1 due
(47:46) **24** **Lecture 1.4** Inner products & orthogonality	**25**	(45:07) **26** **Lecture 2.1** The fundamental theorem of linear ODEs	**27**	(39:35) **28** **Lecture 2.2** Linear independence and the Wronskian HW 2 due

February

Monday	Tuesday	Wednesday	Thursday	Friday
(37:53) **1** **Lecture 2.3** Inhomogeneous ODEs & affine spaces	**2**	(45:51) **3** **Lecture 2.4** Undetermined coefficients	**4**	(44:24) **5** **Lecture 2.5** Power series solutions to ODEs HW 3 due
(43:21) **8** **Lecture 2.6** Singular points & the Frobenius method	**9**	(36:34) **10** **Lectures 2.7** Bessel's equation	**11**	(29:29) **12** **Lecture 3.1** Fourier series and orthogonality HW 4 due
(50:09) **15** **Lecture 3.2** Computing Fourier series & exploiting symmetry	**16**	**17** **MIDTERM 1**	**18**	(31:48) **19** **Lecture 3.3** Solving ODEs with Fourier series
(35:07) **22** **Lecture 3.4** Fourier sine and cosine series	**23**	(51:14) **24** **Lecture 3.5** Complex inner products & Fourier series	**25**	(37:03) **26** **Lecture 3.6** Real vs. complex Fourier seires HW 5 due

March

Monday	Tuesday	Wednesday	Thursday	Friday
(49:37) **1** **Lecture 3.7** Fourier transforms	**2**	(31:32) **3** **Lecture 3.8** Pythagoras, Parseval, and Plancherel	**4**	(56:59) **5** **Lecture 4.1** Boundary value problems HW 6 due
(32:46) **8** **Lecture 4.2** Symmetric and Hermitian matrices	**9**	(46:44) **10** **Lecture 4.3** Self-adjoint linear operators	**11**	(42:30) **12** **Lecture 4.4** Sturm-Liouville theory HW 7 due
(26:12) **15** **Lecture 4.5** Generalized Fourier series	**16**	**17** **MIDTERM 2**	**18**	(35:43) **19** **Lecture 4.6** Some special orthogonal functions HW 8 due
22 ***SPRING BREAK***	**23**	**24** ***SPRING BREAK***	**25**	(35:43) **26** ***SPRING BREAK***
(44:28) **28** **Lecture 5.1** Boundary conditions for the heat equation	**29**	(51:23) **30** **Lecture 5.2** Boundary conditions for the heat equation	**31**	(40.32) **1** **Lecture 5.3** The transport and wave equations HW 9 due

April

Monday	Tuesday	Wednesday	Thursday	Friday
(31:04) **4** **Lecture 5.4** The Schrödinger equation	**5**	(48:39) **6** **Lecture 6.1** The heat & wave equations on the real line	**7**	(42:05) **8** **Lecture 6.2** Semi-infinite domains & the reflection method HW 10 due
(42:03) **11** **Lecture 6.3** Solving PDEs with Laplace transforms	**12**	(44:28) **13** **Lecture 6.4** Solving PDEs with Fourier transforms	**14**	(53:53) **15** **Lecture 7.1** Harmonic functions and Laplace's equation HW 11 due
(29:06) **18** **Lecture 7.2** Eigenfunctions of the Laplacian	**19**	(54:04) **20** **Lecture 7.3** The heat and wave equations in higher dimensions	**21**	**22** **MIDTERM 3** HW 12 due
(51:53) **25** **Lecture 7.4** The Laplacian in polar coordinates	**26**	(48:02) **27** **Lecture 7.5** Three PDEs on a disk	**28**	**29** **Study day** HW 13 due

Comments to: **macaule@clemson.edu**
Last Updated: January 10, 2022