MATH 272, Tentative Calendar

Spring 2020

Monday	Tuesday	Wednesday	Friday
Jan 20th Martin Luther King Day	21st **1** First day, review. Complex functions.	22nd **2** Complex functions, phase.	24th **3** **Homework 0 due.** Hilbert spaces, inner products.
27th **4** Integral inner products, symmetries.	28th **5** Infinite orthonormal bases.	29th **6** Expansion and projection with bases.	31st **7** **Homework 1 due.** Linear operators.
Feb 3rd **8** Differential operators.	4th **9** Hermitian operators, spectra.	5th **10** Orthogonal polynomials.	7th **11** **Homework 2 due.** Orthogonal trigonometric polynomials.
10th **12** Fourier series.	11th **13** Special functions (distributions).	12th **14** Fourier transforms.	14th **15**
17th **16** **Homework 3 due.** Review.	18th **17** Review.	19th **18** **Take home Exam 1 due.** Review.	21st **19** **Exam 1.**
24th **20** Functions in higher dimensions.	25th **21** Curves.	26th **22** Higher dimensional ODEs.	28th **23** **Homework 4 due.** Scalar fields.
Mar 2nd **24** Directional and partial derivatives.	3rd **25** Integration of scalar fields.	4th **26** Vector fields.	6th **27** **Homework 5 due.** Gradient operator.
9th **28** Curl and divergence operators.	10th **29** Integration of vector fields.	11th **30** Laplace operator.	13th **31** **Homework 6 due**. Potential functions.

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16th Spring Break	17th Spring Break	18th Spring Break	20th Spring Break
23rd **32** Flows of vector fields.	24th **33** Coordinate systems.	25th **34** Parameterizations.	27th **35** Cylindrical coordinates.
30th **36** Calculus in cylindrical coordinates.	31st **37** Spherical coordinates.	Apr 1st **38** Calculus in spherical coordinates.	3rd **39** General coordinate systems.
6th **40** **Homework 7 due.** Review.	7th **41** Review.	8th **42** **Take home Exam 2 due.** Review.	10th **43** **Exam 2.**
13th **44** Partial differential equations, separation of variables.	14th **45** Laplace and Poisson's equation.	15th **46** Heat and wave equation.	17th **47** **Homework 8 due.** Fourier transforms for time dependent problems.
20th **48** Quantum harmonic oscillator.	21st **49** Time dependent Schödinger equation.	22nd **50** Cont.	24th **51** **Homework 9 due.** Maxwell's equations.
27th **52** Cont.	28th **53** Cont.	29th **54** PDEs in other coordinate systems.	May 1st **55** Cont.
4th **56** **Homework 10 due.** Review.	5th **57** Review.	6th **58** **Take home Exam 3 due.** Review.	8th **59** **Exam 3.**