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.** Function spaces and Inner products.
27th **4** Hilbert spaces, symmetries.	28th **5** Infinite orthonormal bases.	29th **6** Series and integrals as linear combinations.	31st **7** **Homework 1 due.** Projection with bases.
Feb 3rd **8** Linear operators and adjoints.	4th **9** Hermitian and differential operators.	5th **10** Spectra of differential operators.	7th **11** **Homework 2 due.** Fourier series.
10th **12** Cont.	11th **13** Fourier transforms.	12th **14** Special functions (distributions).	14th **15** Cont.
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** Cont.	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.
16th Spring Break	17th Spring Break	18th Spring Break	20th Spring Break

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23rd **32** Coordinate systems, parameterizations.	24th **33** Cylindrical coordinates.	25th **34** Spherical coordinates.	27th **35** Cont.
30th **36** **Homework 7 due.** Review.	31st **37** Review.	Apr 1st **38** **Take home Exam 2 due.** Review.	3rd **39** **Exam 2.**
6th **40** Higher dimensional ODEs	7th **41** Partial differential equations.	8th **42** Laplace and Poisson's equation.	10th **43** **Homework 8 due.** Heat and wave equation. Fourier transforms.
13th **44** Quantum harmonic oscillator.	14th **45** Cont.	15th **46** Time dependent Schödinger equation.	17th **47** **Homework 9 due.** Cont.
20th **48** Maxwell's equations.	21st **49** Cont.	22nd **50** PDEs in other coordinate systems.	24th **51** Cont.
27th **52** **Homework 10 due.** Review.	28th **53** Review.	29th **54** **Take home Exam 3 due.** Review.	May 1st **55** **Exam 3.**
4th **56** Mini-project: Hydrogen atom.	5th **57** Mini-project: Hydrogen atom.	6th **58** Mini-project: Hydrogen atom.	8th **59** Mini-project: Hydrogen atom.