MATH 272 Calendar
Spring 2022

Color coding:

- **Reading assignments to be done before class on the scheduled day.**
- **Exams set to take place on those days.**
- **Assignments due on these days.**
- **No class on this day.**

Monday	Tuesday	Wednesday	Friday
Jan 17th • **Martin Luther King Day.**	18th **1** • First day: syllabus and review. • Functions in higher dimensions. • **§10.1**	19th **2** • Curves. • Velocity (tangent) and acceleration (normal) vectors. • **§10.2**	21st **3** • Scalar fields. • Partial derivatives. • Directional derivatives. • **§10.3**
24th **4** • Vector fields. • **§10.4**	25th **5** • Gradient. • Level curves. • **§11.1**	26th **6** • Jacobian. • Divergence and curl of vector fields. • **§11.2**	28th **7** • Laplacian and harmonic functions. • **Homework 1.** • **§11.3**
31st **8** • Composite functions. • **§11.4**	Feb 1st **9** • Integration over curves. • **§11.5**	2nd **10** • Potential functions. • Conservative fields. • **§11.6**	4th **11** • **Homework 1 Presentations.**
7th **12** • Double and triple integrals. • **§11.7**	8th **13** • Surfaces. • Implicit parameterizations. • Tangent planes and normals. • **§12.1**	9th **14** • Explicit parameterization of surfaces. • Normals. • **§12.2**	11th **15** • Open. • **Homework 2.**

Monday	Tuesday	Wednesday	Friday
14th **16** • Integration over surfaces. • Flux. • **§12.3, §12.4**	15th **17** • Continue.	16th **18** • Open day.	18th **19** • **Homework 2 Presentations.**
21st **20** • Coordinate systems. • Cylindrical coordinates. • **§13.1**	22nd **21** • Continue.	23rd **22** • Spherical coordinates. • **§13.2**	25th **23** • Continue. • **Homework 3.**
28th **24** • Open day.	Mar 1st **25** • **Homework 3 Presentations.**	2nd **26** • **Exam 1.**	4th **27** • **Exam 1.**
7th **28** • Higher dimensional ODEs.	8th **29** • Continuum limit and partial differential equations.	9th **30** • Continue.	11th **31** • Understanding the – Laplace – Poisson – heat – wave equations. • **Homework 4.**
14th • **Spring Break.**	15th • **Spring Break.**	16th • **Spring Break.**	18th • **Spring Break.**
21st **32** • d'Alembert's solution to the wave equation.	22nd **33** • Separation of variables.	23rd **34** • Time dependent Schödinger equation.	25th **35** • **Homework 4 Presentations.**
28th **36** • Superposition states.	29th **37** • Continue.	30th **38** • Maxwell's equations.	Apr 1st **39** • **Homework 5.**

Monday	Tuesday	Wednesday	Friday
4th **40** • PDEs in other coordinate systems.	5th **41** • **Homework 5 Presentations.**	6th **42** • **Exam 2.**	8th **43** • **Exam 2.**
11th **44** • Complex functions and phase.	12th **45** • Function spaces and inner products.	13th **46** • Linear operators and adjoints.	15th **47** • Differential operators and domains. • **Homework 6.**
18th **48** • Spectra of differential and Hermitian operators.	19th **49** • Orthonormal bases and projection.	20th **50** • Continue.	22nd **51** • **Homework 6 Presentations.**
25th **52** • Fourier series.	26th **53** • Fourier transform on $\mathbb{R}$.	27th **54** • Dirac delta and fundamental solutions.	29th **55** • Continue. • **Homework 7.**
May 2nd **56** • Project and review.	3rd **57** • **Homework 7 Presentations.**	4th **58** • **Exam 3.**	6th **59** • **Exam 3.**