

Course Outline

Math 207 DE – Spring 2019

Class 1 – Monday, January 14

Lecture: [Course Information](#), [Algebra Review](#), [Definition of a Function](#),
[Complete Analysis of a Function - Part 1](#)
[Average Velocity - Part 1](#) and [Part 2](#)

Also posted: [Guide to Review](#), [Are You Ready for Calculus](#) and [Answers](#)

Class 2 – Wednesday, January 16

Lecture: [Complete Analysis of a Function - Part 1](#) (finished),
[Basic Functions and Their Properties](#), [Inverse Functions](#), [Limits at Infinity - Part 1](#)

Also posted: [Quiz 2 Information](#)

Class 3 – Wednesday, January 23

Lecture: [Limits at Infinity - Part 1](#), [Quadratic Inequalities](#)

Also posted: [Quiz 3 Information](#)

Class 4 – Monday, January 28

Lecture: [Limits at Infinity – Part 2](#), [Two-Sided Limits](#)

Class 4.5 – Wednesday, January 30 (Virtual Class)

Lecture: [Two-Sided Limits](#), [Properties of Limits](#)

Also posted: [Quiz 5 Information](#)

Class 5 – Monday, February 4

Lecture: [Continuous Functions](#), [Instantaneous Velocity](#)

Class 6 – Wednesday, February 7

Lecture: [Differentiating by Finding Limits](#)

Also posted: [Exam 1 Review](#)

Class 7 – Monday, February 11

Lecture: [Differentiation 1](#) (proofs of the rules), [Differentiation 1](#) (Practice),
[Differentiating sinx and cosx](#) (proofs)

Class 8 – Wednesday, February 13

Exam 1

Class 9 – Wednesday, February 20

Lecture: [Trigonometric Limits](#), [Tangent Lines](#) (with calculus), [Tangent Lines](#) (before calculus)

Also posted: [Quiz 7 Information](#)

Class 10 – Monday, February 25

Lecture: [Complete Analysis of a Function – Part 2](#), [Differentiable Functions](#), [Relative Extrema](#)
Graphing Polynomials: [Part 1](#) and [Part 2](#)

Class 11 – Wednesday, February 27

Lecture: [Optimization 2](#)

Also posted: [Exam 2 Information](#), [Exam 2 Review](#)

Class 12 – Monday, March 4

Lecture: [The Real Number System](#),
[The Least Upper Bound and the Intermediate Value Theorem](#), [Limits involving e](#)

Class 13 – Wednesday, March 6

Exam 2

Also posted: [Quiz 9 Information](#)

Class 14 – Monday, March 11

Lecture: [Proving the Product Rule](#), [Differentiation 2](#) (practice), [Extreme Value Theorems](#),
[Antiderivatives](#)

Class 15 – Wednesday, March 13

Lecture: [Differentiating Logarithmic Functions](#), [The Mean Value Theorem \(MVT\)](#)

Also posted: [Quiz 11 Information](#)

Class 16 – Monday, March 18

Lecture: [Proving the Quotient Rule](#), [Differentiation 3](#), [Inverse Trigonometric Functions](#)

Class 17 – Wednesday, March 20

Lecture: The Chain Rule ([Practice](#)), [The Second Derivative Test](#), [Optimization 3](#)

Also posted: [Quiz 13 Information](#)

Class 18 – Monday, March 25

Lecture: [Computing Trigonometric Expressions](#), [Inverse Trigonometric Expressions](#),
[Induction](#)

Class 19 – Wednesday, March 27

Lecture: [Differentiating Exponential Functions](#), [Differentiation 5](#) (Practice), [Optimization 4](#)

Also posted: [Exam 3 Information](#), [Exam 3 Review](#)

Class 20 – Monday, April 1

Lecture: [Implicit Differentiation](#) ([more practice](#)), [Summation 2](#)

Class 21 – Wednesday, April 3

Exam 3

Also posted: [Quiz 14 Information](#)

Class 22 – Monday, April 8

Lecture: [Related Rates](#) ([more practice](#)), [Differentiating Trigonometric Functions](#),
[Differentiation 6 \(Practice\)](#)

Class 23 – Wednesday, April 10

Lecture: [Riemann Sums](#), [Riemann Sums \(Practice\)](#)

Also posted: [Quiz 16 Information](#)

Class 24 – Monday, April 22

Lecture: [Antiderivatives After the Chain Rule](#), [Concavity Behavior](#),
[Graphing the Antiderivative](#) (Practice)

Also posted: [Exam 4 Information](#), Final Review: [Version A](#), [Version B](#)

Class 25 – Wednesday, April 24

Lecture: [Complete Analysis of a Function](#), [The Fundamental Theorem of Calculus](#),
[Properties of Definite Integral](#), [Definite Integrals](#) (practice)

Also posted: [Quiz 18 Information](#)

Class 26 – Monday, April 29

Lecture: [Integrating by substitution](#), [Improper Integrals](#), [L'Hôpital's Rule](#)

Class 27 – Wednesday, May 1

Lecture: [Trigonometric Substitution](#), Taylor Polynomials

Class 28 – Monday, May 6

Lecture: [Integrating by Parts](#), [Cantor's Diagonal Argument](#) (video)

Class 29 – Wednesday, May 8

Final Exam (same as Exam 4)