

# Course Outline

## Math 207 GH – Fall 2017

### Class 1 – Tuesday, August 29

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

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

### Class 2 – Thursday, August 31

Lecture: [Complete Analysis of a Function - Part 1](#) (finished)

Also posted: [Quiz 2 Information](#)

### Class 3 – Tuesday, September 5

Lecture: Trigonometry Review: Right Triangle Trigonometry, [Famous Values](#),  
[Unit Circle Definitions](#), [Symmetries of the Unit Circle](#),  
Trigonometric Equations: [Part 1](#), [Part 2](#),  
Algebra Review: [Quadratic Inequalities](#)  
[Average Velocity - Part 1](#), [Basic Functions and Their Properties](#),  
[Limits at Infinity - Part 1](#)

### Class 4 – Thursday, September 7

Lecture: Algebra Review: [Logarithms - Part 1](#), [Inverse Functions](#),  
[Average Velocity - Part 2](#)

Also posted: [Quiz 4 Information](#)

### Class 5 – Tuesday, September 12

Lecture: Algebra Review: [Logarithms - Part 2](#)  
[Properties of Limits](#), [Limits at Infinity – Part 2](#)

### Class 6 – Thursday, September 14

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

Also posted: [Exam 1 Information](#), [Exam 1 Review](#)

### Class 7 – Tuesday, September 19

Lecture: Review for Exam 1, Circles ([Theory](#) and [Practice](#)), Introduction to Analytic Geometry,  
[Continuous Functions](#)

**Class 8 – Thursday, September 21**  
**Exam 1**

**Class 9 – Tuesday, September 26**  
**Lecture:** [Instantaneous Velocity](#)

**Class 10 – Thursday, September 28**  
**Lecture:** [Differentiating by Finding Limits](#), [Differentiation 1](#) (proofs of the rules),  
[Tangent Lines](#) (with calculus), [Tangent Lines](#) (before calculus)  
**Also posted:** [Quiz 8 Information](#)

**Class 11 – Tuesday, October 3**  
**Lecture:** [Trigonometric Limits](#), [Differentiating  \$\sin x\$  and  \$\cos x\$](#)  (proofs), [Differentiation 1](#) (Practice)  
[Differentiable Functions](#)

**Class 12 – Thursday, October 5**  
**Lecture:** [The Real Number System](#), [The Intermediate Value Theorem](#)  
**Also posted:** [Quiz 10 Information](#)

**Class 13 – Tuesday, October 10**  
**Lecture:** [Graphing Polynomials - 1](#), [Limits involving  \$e\$](#) , [Complete Analysis of a Function – Part 2](#)

**Class 14 – Thursday, October 12**  
**Lecture:** [Relative Extrema](#), [Proving the Product Rule](#), [Differentiation 2](#) (practice)  
**Also posted:** [Exam 2 Information](#), [Exam 2 Review](#)

**Class 15 – Tuesday, October 17**  
**Lecture:** Midterm Review, [Graphing Polynomials - 2](#), [Inverse Trigonometric Functions](#)

**Class 16 – Thursday, October 19**  
**Exam 2**  
**Also posted:** [Quiz 12 Information](#)

**Class 17 – Tuesday, October 24**  
**Lecture:** [Extreme Value Theorems](#), [Optimization 2](#)

**Class 18 – Thursday, October 26**

Lecture: [Differentiating Logarithmic Functions](#), [Proving the Quotient Rule](#), [Differentiation 3](#)

Also posted: [Quiz 14 Information](#)

**Class 19 – Tuesday, October 31**

Lecture: [Antiderivatives](#)

**Class 20 – Thursday, November 2**

Lecture: [The Mean Value Theorem \(MVT\)](#), [Computing Trigonometric Expressions](#),  
[Inverse Trigonometric Expressions](#)

Also posted: [Quiz 16 Information](#)

**Class 21 – Tuesday, November 7**

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

**Class 22 – Thursday, November 9**

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

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

**Class 23 – Tuesday, November 14**

Lecture: Review for Exam 3, [Summation 2](#)

**Class 24 – Thursday, November 16**

Exam 3

**Class 25 – Tuesday, November 21**

Lecture: [Implicit Differentiation](#) ([more practice](#)), [Related Rates](#) ([more practice](#))

Also posted: [Quiz 19 Information](#)

**Class 26 – Tuesday, November 28**

Lecture: [Differentiating Trigonometric Functions](#), [Differentiation 6 \(Practice\)](#), [Riemann Sums](#),  
[Riemann Sums \(Practice\)](#)

Also posted: [Optimization 4](#)

**Class 27 – Thursday, November 30**

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

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

**Class 28 – Tuesday, December 5**

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

**Class 29 – Thursday, December 7**

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

**Class 30 – Tuesday, December 12**

**Lecture:** Final Review, [Trigonometric Substitution](#)

**Class 31 – Thursday, December 14**

**Final Exam** (same as Exam 4)