

# Course Outline

## Math 207 GH – Fall 2014

### Class 1 Tuesday, August 26, 2014

Lecture: Course Outline ([syllabus](#), [textbook info](#), [calculator info](#), [Guide to Review](#))  
[What is a Function?](#) (1.1), [Basic Functions and Their Properties](#) (1.2, 1.4)  
Completing the Square [Parts 1,2,3](#) and [Part 4](#), [Factoring 1](#)  
Homework: [Questions](#) and Problems #1-7 on [Are You Ready for Calculus?](#)

### Class 2 Thursday, August 28, 2014

Lecture: [Complete Analysis of a Function – Part 1](#)  
Review of Logarithms ([Part 1](#), [Part 2](#)) (1.6)  
Graph of a parabola (Part 1, Part 2)  
Homework: [Questions](#) and Problems #8-29 on [Are You Ready for Calculus?](#)  
Also posted: [Review for Quiz 1](#)

### Class 3 Tuesday, September 2, 2014

Lecture: Review of [Circles](#), [Limits at Infinity – Part 1](#) (2.6)

### Class 4 Thursday, September 4, 2014

Lecture: [Limits at Infinity – Part 2](#) (2.6)  
Homework: Problems #30-33 on [Are You Ready for Calculus?](#)  
Also posted: [Review for Quiz 2](#)

### Class 5 Tuesday, September 9, 2014

Lecture: Review of Trigonometry ([Symmetries of the Unit Circle](#), [Trig Equations 1](#), [Trig Equations 2](#),  
[Compound Angle Identities](#), [Half-Angle Formulas](#)) [Average Velocity](#) (2.1)

### Class 6 Thursday, September 11, 2014

Lecture: [Quadratic Inequalities](#), [Properties of Limits at Infinity](#) (2.6), [Two-sided limits](#) (2.2, 2.3),  
[Properties of Two-Sided Limits](#) (2.2, 2.3)  
Also posted: [Exam 1 Information](#), [Exam 1 Review](#)

### Class 7 Tuesday, September 16, 2014

Lecture: Review for Exam 1, [Two Important Trigonometric Limits](#) (3.3), [Inverse Functions](#) (1.6)

### Class 8 Thursday, September 18, 2014

#### Exam 1

Also posted: [Review for Quiz 3](#)

### Class 9 Tuesday, September 23, 2014

Lecture: [Differentiation 1](#) (3.1), [Differentiating by Finding Limits](#) (2.8)

### Class 10 Thursday, September 25, 2014

Lecture: [Differentiation 1](#) (practice), [Tangent Lines](#) (3.1), Review of [Graphing Polynomials 1](#)  
Also posted: [Review for Quiz 4](#)

**Class 11 Tuesday, September 30, 2014**

Lecture: Leibniz Notation (2.8), Continuity (2.5), Differentiable and Continuous Functions (2.8)

Also posted: [Graphing Polynomials 1](#),  
[Differentiating  \$\sin x\$  and  \$\cos x\$](#)  (3.3)

**Class 12 Thursday, October 2, 2014**

Lecture: [Relative Extrema](#) (4.1), [Complete Analysis of a Function - Part 2](#)

Also posted: [Review for Quiz 5](#)

**Class 13 Tuesday, October 7, 2014**

Lecture: [Optimization 2](#) (4.7)

**Class 14 Thursday, October 9, 2014**

Lecture: The Product Rule ([Proof](#) and [Practice](#)) (3.2), [Anti-Derivatives](#) (4.9)

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

**Class 15 Tuesday, October 14**

Lecture: Review for Exam 2, The Second Derivative Test (4.9)

**Class 16 Thursday, October 16**

**Exam 2**

Also posted: [Review for Quiz 6](#)

**Class 17 Tuesday, October 21**

Lecture: The Quotient Rule ([Proof](#) and [Practice](#)) (3.2),  
[Limits involving  \$e\$](#) , [Differentiating Logarithmic Functions](#) (3.6)  
[Axioms of Real Numbers](#), [The Intermediate Value Theorem](#) (2.5)

**Class 18 Thursday, October 23**

Lecture: [The Mean Value Theorem](#) (4.2)

Also posted: [Review for Quiz 7](#)

**Class 19 Tuesday, October 28**

Lecture: The chain Rule (3.4), ([Practice](#)) Differentiating Exponential Functions (3.1) ([Practice](#))

**Class 20 Thursday, October 29**

Lecture: [Concavity Behavior](#) (4.3), [Inverse Trigonometric Functions](#) (1.6)

Also posted: [Review for Quiz 8](#), [Optimization 3](#), [Complete Analysis of a Function](#),  
[Computing Trigonometric Expressions](#), [Inverse Trigonometric Expressions](#)

Also posted: [Review for Quiz 8](#)

**Class 21 Tuesday, November 4**

Lecture: [Differentiating Trigonometric Functions](#) (3.5), [Differentiation 6](#),  
[Implicit Differentiation](#) (3.5)

**Class 22 Thursday, November 6**

Lecture: [Antiderivatives after the chain rule](#) (4.9), [Related Rates](#) (3.9),  
[Graphing Polynomials](#) (Part 2)

Also posted [Exam 3 Information](#)

**Class 23 Tuesday, November 11**

Review for Exam 3

**Class 24 Thursday, November 13**

Exam 3

Also posted [Review for Quiz 9](#)

**Class 25 Tuesday, November 18**

Lecture: [L'Hôpital's Rule](#) (4.4), [Induction](#), [Summation](#) (Appendix E)

**Class 26 Thursday, November 20**

Lecture: [Riemann Sums](#), [Practice](#), (5.1, 5.2)

**Class 27 Tuesday, November 25**

Lecture: [Definite Integrals](#) (5.2), [Integrating by substitution](#) (5.5)

Also posted: [Exam 4 Information](#), [Exam 4 Review - 1](#), [Exam 4 Review - 2](#)

**Class 28 – Tuesday, December 2**

Lecture: [Properties of the Definite Integral](#) (5.2), [The Fundamental Theorem](#) (5.3)  
[Improper Integrals](#) (7.8)

**Class 29 – Thursday, December 4**

Lecture: [Integrating by parts](#) (7.1), [Application of the Definite Integral - 1](#) (5.2, 6.1)

**Class 30 – Tuesday, December 9**

Final Review

**Class 31 – Thursday, December 11**

Final Exam