

# Math 208 - Calculus 2 - Spring 2013

## Course Outline

### Class 1 – Tuesday, January 15

**Lecture:** Review of differentiation and integration  
**Also posted:** [Are you ready for calculus 2?](#) and [Solutions Review of Trigonometric Functions](#)

### Class 2 – Thursday, January 17

**Lecture:** Differentiating inverse functions  
[Differentiating trigonometric functions](#) (3.5, 7.6)  
**Also posted:** [Differentiation](#) (practice)  
**Homework:** Fill out this online [Questionnaire](#)  
**Extra Credit Assignment:** 1. Sort out the sign of  $\tan(\cos^{-1}x)$   
2. Find an argument for (other than differentiating both) why the derivatives of  $\sin^{-1}x$  and  $\cos^{-1}x$  are opposites of each other.  
**Also posted:** [Quiz 1 Information](#)

### Class 3 – Tuesday, January 22

**Lecture:** [The Fundamental Theorem of Calculus](#) (5.4)  
[Logarithmic and Exponential Functions](#) (7.2, 7.3)  
**Also posted:** [Basic Integration Formulas](#), [Differentiation 2](#)  
**Extra Credit Assignment:** Define  $f(x) = \sin^{-1}x$ . Explain, (using the graph of  $y = \sin^{-1}x$ ) why the domains of  $f$  and  $f'$  are different.

### Class 4 – Thursday, January 24

**Lecture:** [Integrating by Substitution](#) (5.5)  
**Also posted:** [Quiz 2 Information](#)

### Class 5 – Tuesday, January 29

**Lecture:** [Integrating trigonometric functions](#) (8.2), [Integration by parts](#) (8.1)  
**Also posted:** [Trigonometric Formulas](#)

### Class 6 – Thursday, January 31

**Lecture:** [Integration by parts](#) (8.1)  
**Also posted:** [Quiz 3 Information](#)

### Class 7 – Tuesday, February 5

**Lecture:** [Trigonometric substitutions](#) (8.3), [Hyperbolic Functions](#) (7.7)

### Class 8 – Thursday, February 7

**Lecture:** [L'Hôpital's Rule](#) (7.5)  
**Also posted:** [Quiz 4 Information](#)

### Class 9 – Tuesday, February 12

**Lecture:** [Partial Fractions](#) (8.4)

**Class 10 – Thursday, February 14**

Lecture: [Improper Integrals](#) (8.7)

Also posted: [Exam 1 Information](#) and [Integrals](#) (practice)

**Class 11 – Tuesday, February 19**

Lecture: Review for Exam 1

**Class 12 – Thursday, February 21**

Exam 1

**Class 13 – Tuesday, February 26**

Lecture: [Riemann Sums](#) (5.2, 5.3), [Numerical Integration](#) (8.6)

**Class 14 – Thursday, February 28**

Lecture: [Applications of the Definite Integral](#) (5.6)

Also posted: [Quiz 6 Information](#)

**Class 15 – Tuesday, March 5**

Lecture: Volumes by [cross sections](#) and the [disk method](#) (6.1)

**Class 16 – Thursday, March 7**

Lecture: [Volumes by the washer method](#) (6.1)

Also posted: [Quiz 7 Information](#)

**Class 17 – Tuesday, March 12**

Lecture: [Volume by cylindrical shells](#) (6.2)

**Class 18 – Thursday, March 14**

Lecture: [Arc Length](#) (6.3)

Also posted: [Quiz 8 Information](#)

**Class 19 – Tuesday, March 19**

Lecture: [The real number system](#) (Appendix 6)

[Sequences 1](#) (10.1)

**Class 20 – Thursday, March 21**

Lecture: [Sequences 1](#) (10.1)

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

**Class 21 – Tuesday, April 2**

Lecture: Exam 2 Review, [Geometric Series](#) (10.2)

**Class 22 – Thursday, April 4**

Exam 2

Also posted: [Quiz 9 Information](#)

**Class 23 – Tuesday, April 9**

Lecture: [Series 1](#) (10.2, 10.3)

**Class 24 – Thursday, April 11**

Lecture: [Series 2](#) (10.4)

Also posted: [Quiz 10 Information](#)

**Class 25 – Tuesday, April 16**

Lecture: [Root Test and Ratio Test](#) (10.5)

**Class 26 – Thursday, April 18**

Lecture: [Series 4](#) (10.6)

Also posted: [Quiz 11 Information](#)

**Class 27 – Tuesday, April 23**

Lecture: [Power Series](#) (10.7)

**Class 28 – Thursday, April 25**

Lecture: [Taylor Series and their Applications](#) (10.8, 10.9, 10.10)

Also posted: [Quiz 12 Information](#)

**Class 29 – Tuesday, April 30**

Lecture: [Taylor Series and their Applications](#) (10.8, 10.9, 10.10)

**Class 30 – Thursday, May 2**

Lecture: [Parametric Equations](#) (11.1, 11.2, 11.4)

**Class 31 – Tuesday, May 7**

Lecture: Final Review

**Class 32 – Thursday, May 9**

Final Exam