

Week	Dates	Readings & Topics	Assignment Due Thursday
1	8/21-8/25 Classes begin 8/22	Chapter 1 Functions	
2	8/28/1	2.1 Rates of Change and Tangents to Curves 2.2 Limit of a Function and Limit Laws	HW1 (Ch. 1) Due Students will be able to: - draft a coherent and concise mathematical essay
3	9/4/8	2.4 One-Sided Limits 2.5 Continuity	HW2 (2.1, 2.2) Due Students will be able to: - find the limit of a function using the formal definition of limit laws and limit identities
4	9/11/15	2.6 Limits Involving Infinity; Asymptotes of Graphs 3.1 Tangents and the Derivative at a Point 3.2 The Derivative as a Function	HW3 (2.4, 2.5) Due Students will be able to: - determine if a function is continuous
5	9/18/22	3.3 Differentiation Rules 3.4 The Derivative as a Rate of Change	HW4 (2.6, 3.1, 3.2) Due Students will be able to: - determine infinite limits, limits of a function at infinity, and vertical and horizontal asymptotes of a function - determine the derivative of algebraic functions using the definition of a derivative
6	9/25/29, 9/26, Prelim 1, Location TBA 7:30-9:00P on sections 1.13.2 (not 2.3)	3.5 Derivatives of Trigonometric Functions 3.6 The Chain Rule	
7	10/21/6	3.7 Implicit Differentiation 3.8 Derivatives of Inverse Functions and Logarithms 3.9 Inverse Trigonometric Functions	HW5 (3.3, 3.4, 3.5) Due Students will be able to: - determine the derivative of algebraic and trigonometric functions using the definition of a derivative and derivative identities
8	10/9/13 FALL BREAK No class M or T	3.10 Related Rates	HW6 (3.6, 3.7, 3.8) Due Students will be able to: - determine the derivative of a function using implicit differentiation - determine the derivative of a function using the chain rule
9	10/16/20	3.11 Linearization (Differentials not on the exams or homework) 4.1 Extreme Values of Functions	HW7 (3.9, 3.10) Due Prelim I Revision Due Students will be able to: - identify and solve related rates problems using derivative identities and techniques
10	10/23/27	4.2 The Mean Value Theorem 4.3 Monotonic Functions and the First Derivative Test	HW8 (3.11, 4.1) Due Students will be able to: - identify and solve linearization problems using derivative identities and techniques - analyze functions using the extreme value theorem
11	10/30/11/3, 10/31, Prelim 2, Location TBA 7:30-9:00P on sections 1.14.1 (not 2.3)	4.4 Concavity and Curve Sketching 4.5 Indeterminate Forms and L'Hopital's Rule	
12	11/6/11/10	4.6 Applied Optimization 4.8 Antiderivatives	HW9 (4.2, 4.3, 4.4) Due Students will be able to: - analyze functions using the intermediate value theorem and mean value theorem - sketch the graph of a function using information from its two derivatives and antiderivatives
13	11/13/11/17	5.1 Area and Estimating with Finite Sums 5.2 Sigma Notation and Limits of Finite Sums 5.3 The Definite Integral	HW10 (4.5, 4.6, 4.8) Due Prelim II Revision Due Students will be able to: - identify limits involving indeterminate forms and appropriately use L'Hospital's Rule to resolve them - construct optimization problems using geometric or algebraic constraints and solve them using derivative identities and techniques
14	11/20/11/24 THANKSGIVING BREAK No class W, R or F	5.4 The Fundamental Theorem of Calculus	HW11 (5.1, 5.2, 5.3) Due Capstone Project Due Students will be able to: - determine definite integrals using Riemann sums
15	11/27-12/1 Last day of class: 12/1	More on 5.4 FTCs and Review for Final	HW12 (5.4) Due Students will be able to: - determine definite integrals using the fundamental theorem of calculus

Final Exam 12 December 2017 from 7:00pm to 9:30pm, location T.B.A., comprehensive

Table 1: Tentative Course Schedule: During a typical week, students are assigned readings from the textbook before Tuesday and Thursday class. Weekly homework assignments and prelim revisions are due at 11pm EST on Thursdays. The schedule also marks the various times and dates for each of the prelims, final exam, and capstone project. A full scale version of this table is available on the course website.