

COURSE OUTLINE FOR MATH 108

Instructor: Nick Marsden, Ewing 258

Text: Calculus with Applications
Seventh or Eighth Edition
Author - Lial, Greenwell and Ritchey

CHAPTER 1: LINEAR FUNCTIONS

#	Text	Time	
1	1.1	1	Slopes and Equations of Lines
2	1.2	2	Linear Functions and Applications

CHAPTER 2: NONLINEAR FUNCTIONS

#	Text	Time	
3	2.1	1	Properties of Functions
4	2.2	3	Quadratic Functions; Translation and Reflection
5	2.3	2	Polynomial and Rational Functions
			TAKE-HOME TEST

CHAPTER 3: THE DERIVATIVE

#	Text	Time	
6	3.1,3.2	1	Limits and Continuity
7	3.3	1	Rates of Change
8	3.4	1	Definition of the Derivative
9	3.5	1	Graphical Differentiation

CHAPTER 4: CALCULATING THE DERIVATIVE

#	Text	Time	
10	4.1	2	Techniques for Finding Derivatives
11	4.2	1	Derivatives of Products and Quotients
12	4.3	1	The Chain Rule
		1	TEST 1, Lessons 1 to 12

CHAPTER 5: GRAPHS AND THE DERIVATIVE

#	Text	Time	
13	5.1	1	Increasing and Decreasing Functions
14	5.2	1	Relative Extrema
15	5.3	2	Higher Derivatives; Concavity; The Second Derivative
Test			
16	5.4	2	Asymptotes and Curve Sketching

CHAPTER 6: APPLICATIONS OF THE DERIVATIVE

#	Text	Time	
17	6.1	1	Absolute Extrema
			TAKE-HOME TEST

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#	Text	Time	
18	6.2	2	Applications of Extrema
19	6.3	1	A Further Applications from Business: Economic Lot Size
20	6.4	1	Implicit Differentiation
21	6.5	2	Related Rates
22	6.6	1	Differentials: Linear Approximation
		1	TEST 2, Lessons 13 to 22

EXPONENTIAL AND LOGARITHMIC FUNCTIONS

#	Text	Time	
23	2.4	1	Exponential Functions
24	2.5	2	Logarithmic Functions
25	2.6	2	Applications: Growth and Decay; Finance
26	4.4	.5	Derivatives of Exponential Functions
27	4.5	.5	Derivatives of Logarithmic Functions
			TAKE-HOME TEST

CHAPTER 7: INTEGRATION

#	Text	Time	
28	7.1	1	Antiderivatives
29	7.2	1	Integration by Substitution
30	Notes	1	Area
31	7.4	1.5	The Fundamental Theorem of Calculus
32	7.5	1.5	The Area Between Two Curves
		1	TEST 3, Lessons 23 to 32

MORE INTEGRATION

#	Text	Time	
33	8.1	2	Integration by Parts; Tables of Integrals
34	10.1	1	Solutions of Elementary and Separable Differential Equations

CHAPTER 13: THE TRIGONOMETRIC FUNCTIONS

#	Text	Time	
35	13.1	2	Definitions of the Trigonometric Functions
36	13.2-13.3	2	Calculus with Trigonometric Functions
		1	TEST 4, Lessons 33 to 36

Review: 3 hours

Final exam, Lessons 1 to 36