



STARK STATE COLLEGE

GENERAL SYLLABUS

Course Information

Course Name: Analytic Geometry and Calculus I
Course Number: MTH223

Required Materials

Textbook(s): Calculus-Early Transcendentals, 9th edition; James Stewart, Daniel Clegg, Saleem Watson
 Cengage Learning, 2019;
 ISBN (instant access): 9780357128930
 ISBN (loose leaf): 9780357771105

Required Readings: None

Additional Materials: A graphing calculator is recommended. The math department supports the TI 82/83; TI 84; TI 85/86

Course Outline/Calendar

The date of coverage and order of coverage may be modified based on the faculty member and events beyond the control of faculty members that interfere with class times and teaching.

16 Week Calendar

Week	Chapter/Topic/Lab
1	Ch. 2 Limits and Continuity 2.1 Tangent and Velocity Problems 2.2 The Limit of a Function 2.3 The Limit Laws
2	Ch. 2 Limits and Continuity 2.4 The Precise Definition of a Limit 2.5 Continuity 2.6 Limits at Infinity; Asymptotes
3	Ch. 2 Limits and Continuity 2.7 Derivatives and Rates of Change 2.8 The Derivative as a Function
4	TEST #1-Chapter 2 3.1 Derivatives of Polynomial and Exp. Functions 3.2 The Product and Quotient Rules
5	Ch. 3 Differentiation Rules 3.3 Derivatives of Trigonometric Functions

Week	Chapter/Topic/Lab
	3.4 The Chain Rule 3.5 Implicit Differentiation
6	Ch. 3 Differentiation Rules 3.6 Derivatives of Logarithmic Functions 3.9 Related Rates 3.10 Linear Approximations and Differentials 3.11 Hyperbolic Functions (if time permits)
7	Review for the Midterm Exam. Test #2-Chapter 3
8	Ch. 4 Applications of Differentiation 4.1 Extreme Values 4.2 The Mean Value Theorem 4.3 How Derivatives Affect the Shape of a Graph
9	Ch. 4 Applications of Differentiation 4.4 Indeterminate Forms and L'Hospital's Rule 4.5 Summary on Curve Sketching 4.6 Graphing with and without calculators
10	Ch. 4 Applications of Differentiation 4.7 Optimization Problems 4.8 Newton's Method (if time permits) Test #3-Chapter 4
11	Ch. 4 Applications of Differentiation 4.9 Antiderivatives Ch. 5 Integrals 5.1 Areas and Distances
12	Ch. 5 Integrals 5.2 The Definite Integral 5.3 The Fundamental Theorem of Calculus 5.4 Indefinite Integrals and the Net Change Theorem
13	Ch. 5 Integrals 5.5 The Substitution Rule 6.1 Area Between Curves
14	Make-up day; review Test #4- 4.9; Chapter 5; 6.1
15	Make-up days and Final Exam Review (if time permits)
16	Comprehensive Final Exam:

8 Week Calendar

Week	Chapter/Topic/Lab
1	Ch. 2 Limits and Continuity 2.1 Tangent and Velocity Problems 2.2 The Limit of a Function 2.3 The Limit Laws 2.4 The Precise Definition of a Limit 2.5 Continuity 2.6 Limits at Infinity; Asymptotes
2	Ch. 2 Limits and Continuity 2.7 Derivatives and Rates of Change 2.8 The Derivative as a Function TEST #1-Chapter 2 3.1 Derivatives of Polynomial and Exp. Functions 3.2 The Product and Quotient Rules
3	Ch. 3 Differentiation Rules 3.3 Derivatives of Trigonometric Functions 3.4 The Chain Rule 3.5 Implicit Differentiation 3.6 Derivatives of Logarithmic Functions 3.9 Related Rates 3.10 Linear Approximations and Differentials 3.11 Hyperbolic Functions (if time permits)
4	Review for the Midterm Exam. Test #2-Chapter 3
5	Ch. 4 Applications of Differentiation 4.1 Extreme Values 4.2 The Mean Value Theorem 4.3 How Derivatives Affect the Shape of a Graph 4.4 Indeterminate Forms and L'Hospital's Rule 4.5 Summary on Curve Sketching 4.6 Graphing with and without calculators
6	Ch. 4 Applications of Differentiation 4.7 Optimization Problems 4.8 Newton's Method (if time permits) 4.9 Antiderivatives Test #3-Chapter 4 Ch. 5 Integrals 5.1 Areas and Distances
7	Ch. 5 Integrals 5.2 The Definite Integral 5.3 The Fundamental Theorem of Calculus 5.4 Indefinite Integrals and the Net Change Theorem 5.5 The Substitution Rule 6.1 Area Between Curves
8	Make-up day; review Test #4- 4.9; Chapter 5; 6.1 Make-up days and Final Exam Review (if time permits) Comprehensive Final Exam