

M208 Syllabus

Textbook: Technical Calculus with Analytic Geometry,
Fourth Edition, by Peter Kuhfittig

CONTENTS

Introduction to Analytic Geometry

- The Cartesian Coordinate System and Distance Formula
- The Slope of a line
- The Equation and Graph of a line
- Curve Sketching [intercepts, symmetry, asymptotes, and extent] (optional)

Limits and derivatives

- Definition of a Function
- Definition and Computation of Limits
- Definition of the Derivative
- Computing the Derivative from the Definition
- Derivatives of Polynomials
- Instantaneous Rates of Change: Technical Applications
- Product, Quotient, and Generalized Power Rules
- Higher Derivatives

Application of the Derivatives

- The First-Derivative Test
- The Second-Derivative Test
- Technical Applications of Minima and Maxima
- Related Rates and Applications
- Differentials and Applications

The Integral

- Antiderivatives
- Find the Area under a Curve by using Limits
- The Fundamental Theorem of the Calculus
- Definition of the Definite Integral
- Basic Integration Formulas
- Area Between Curves
- Improper Integral

Derivatives of Transcendental Functions

- Derivatives of Trigonometric Functions
- Derivative of the Logarithmic Functions
- Derivative of the Exponential Functions
- L'Hospital's Rule and Technical applications (optional)

Sample Math M208 Syllabus

Date	Sections	Topics
26-Aug	1.1,1.2,1.3	Cartesian coordinates, distance, slope
28-Aug	1.3,1.4	Slope, straight lines, curve sketching
2-Sep	2.1,2.2	Functions, intervals, limits
4-Sep	2.2	Limits
9-Sep	2.3,2.4	Definition of the derivative Derivatives of polynomials, instantaneous rates of change
11-Sep	2.5,2.6	
16-Sep	2.7	Differentiation formulas
18-Sep	Exam1	
23-Sep	2.9	Higher derivatives
25-Sep	3.1	First derivative test
30-Sep	3.2	Second derivative test
2-Oct	3.3	curve sketching
7-Oct	3.4	Applications of maxima and minima
9-Oct	3.5	Related rates
14-Oct	3.6	Differentials
16-Oct	Exam2	
21-Oct	4.1	Antiderivatives
23-Oct	4.2	Area
28-Oct	4.3,4.4	Definite integrals and the Fundamental Theorem
30-Oct	4.5	Basic integration formulas
4-Nov	4.6	Area between curves
6-Nov	4.7	Improper integrals
11-Nov	Exam3	
13-Nov	6.1,6.2	Derivatives of Sine and Cosine functions Derivatives of other trig functions, Logarithmic and exponential functions
18-Nov	6.3,6.6	
20-Nov	6.7,6.8	Derivatives of logarithmic and exponential functions
25-Nov	6.9	L'Hospital's Rule
2-Dec	Review	
4-Dec	Review	
	Final	
09-Dec	Exam	