Catalog Description:
Differential and integral calculus of one real variable.

Prerequisites:
Math Placement Level L and previous calculus experience.

Exclusions:
For 1161.01: Not open to students with credit for any math course numbered 1152 or higher, or for the quarter-system math courses 151.xx and 152.xx, or for any quarter-system course numbered 162.xx or higher.
For 1161.02: Intended for students in Freshman Engineering Honors.

Text:
Calculus for Scientists and Engineers: Early Transcendentals, 2nd OSU custom edition, by Briggs, Cochran, Gillett, Person, ISBN: 9781269753449

Topics:

2.1; 2.2	The Idea of Limits; Definition of Limits
2.2; 2.3	Definition of Limits; Limit Laws
2.4; 2.5	Infinite Limits; Limits at Infinity
2.5; 2.6	Limits at Infinity; Continuity, the Intermediate Value Theorem
2.7	Precise Definition of Limits
3.1	Introducing the Derivative
3.2; 3.3	Rules of Differentiation; Product and Quotient Rules
3.4; 3.5	Derivatives of Trig Functions; Derivatives as Rate of Change
3.5; 3.6	Derivatives as Rate of Change; The Chain Rule
3.7	Implicit Differentiation
	Midterm 1

3.8; 3.9	Derivatives of Logarithms and Exponential Functions; Derivatives of Inverse Functions
3.10	Related Rates
4.1	Maxima and Minima
4.2; 4.3	What derivatives Tell Us; Graphing
4.4	Optimization Problems
4.5; 4.6	Linear Approximations and Differentials; Mean Value Theorem
4.6; 4.7	Mean Value Theorem; L'Hopital's Rule
4.9	Antiderivatives
5.1	Approximating Areas under Curves, Sigma Notation
5.2	Definite Integrals
	Midterm 2
5.3	Fundamental Theorem of Calculus
5.4; 5.5	Working with Integrals; Substitution Rule
5.5; 6.1	Substitution Rule; Velocity and Net Change
6.2	Regions between Curves
6.3	Volumes by Slicing
6.4	Volumes by Shells
6.5; 6.6 11.5	Lengths of Curves; Surface Area
6.7	Physical Applications: Density & Mass, Work, Lifting Problems, Force & Pressure
6.8; 6.9	Log and Exponential Functions Again; Exponential Growth and Decay
7.1; 7.2	Integration: Basic Approaches; Integration by Parts
	Midterm 3
7.3	Trig Integrals
7.4	Trig Substitutions
7.5	Partial Fractions
7.8	Improper Integrals
	Final