

MATH 232 Departmental Syllabus

MATH 232 Course Description Calculus topics of integration in the context of polynomial, rational, exponential, and logarithmic function classes. Trigonometric functions introduced and followed with limits, derivatives, integrals, and applications in the context of trigonometric functions. Differential equations modeling exponential growth and decay (linear and separable ODEs). Evaluation of limits by L'Hôpital's Rule. Second semester of a two-semester course.

PREREQUISITE: Successful completion (D- or better) in MATH 231.

RESTRICTIONS: Students who received credit in MATH241, MATH242, or MATH243 are not eligible to take this course without permission.

TEXTBOOKS: WebAssign Access for Larson's Calculus I with Precalculus (A One Year Course), 3rd Edition: *ISBN 9780840068330*; WebAssign Access for Stewart's Calculus: Early Transcendentals, 9th Edition: *ISBN 9781337613927*.

OTHER REQUIRED MATERIALS: WebAssign and scientific calculator.

TEXTBOOK SECTIONS AND/OR TOPICS

Each "unit" below is a 55-minute class meeting with the primary instructor. A typical semester has 41 units. Below is the number of units per topic for a 41-unit semester (38 units of content and 3 review days):

Title (Textbook sections)	Number of units
Derivatives of Exponential Functions (8.1)	1
Differential Equations: Growth and Decay (8.4)	1.5
Derivatives of Logarithmic Functions (8.2)	1
Radical Functions - Properties and Limits (1.3 and 3.3)	1
Radical Functions - Derivatives (4.1 and 4.2)	1.5
Radian and Degree Measure (9.1)	1.5
Trigonometric Functions on the Unit Circle (9.2)	1.5
Graphs of Trigonometric Functions (9.5 and 9.6)	1.5
Right Triangle Trigonometry	0.5
Limits Involving Trigonometric Functions (11.1)	1
Derivatives of Trigonometric Functions (11.2)	1.5
Inverse Trigonometric Functions (9.7)	1

Title (Textbook sections)	Number of units
Derivatives of Inverse Trigonometric Functions (11.4)	1
Linear Approximations (5.8)	1.5
Implicit Differentiation (4.5)	2
Logarithmic Differentiation (8.2)	1.5
Related Rates (4.6)	2
Optimization Problems (5.7)	2
Antiderivatives and Indefinite Integration, (6.1)	2
Integration of Trigonometric Functions (11.3)	1
Integration Involving Inverse Trigonometric Functions (11.5)	0.5
Area (6.2)	1.5
Definite Integrals (6.3)	1
The Fundamental Theorem of Calculus (6.4)	2.5
Integration by Substitution (6.5)	3
L'Hôpital's Rule (B.1)	1.5
Separable Equations (8.4)	0.5
Total	38

GRADING SCALE:

$A \geq 89.5\%$, $A^- \geq 86.5\%$, $B^+ \geq 83.5\%$, $B \geq 79.5\%$, $B^- \geq 76.5\%$, $C^+ \geq 73.5\%$, $C \geq 69.5\%$, $C^- \geq 66.5\%$,
 $D^+ \geq 63.5\%$, $D \geq 59.5\%$, $D^- \geq 56.5\%$, $F < 56.5\%$.

ASSESSMENT COURSE GRADE WEIGHT: Total Exams 65 – 70% (Final Exam = 20 – 25%, Two to Four Exams = 40 – 48%), Quizzes, attendance, and other class activities = 12 – 20%, Web Assign (Homework) = 12 – 15%.

Notes: Completed by Diego Penta, January 2024. Referenced Math 232 syllabi (Newark campus) from Spring 2023, Spring 2022. Approved by the Foundational Math Committee.