DAVIS UNIVERSITY

COURSE SYLLABUS

MAC231: ANALYTIC GEOMETRY AND CALCULUS I

COURSE SYLLABUS FOR: MAC231 ANALYTIC GEOMETRY AND CALCULUS I

CREDIT HOURS: 5 CREDITS

INSTRUCTOR:

INSTRUCTOR EMAIL:

INSTRUCTOR OFFICE HOURS:

COURSE DESCRIPTION: This is the first course in analytic geometry and the theory and application of calculus. Selected topics include a review of functions, limits and continuity, the derivative, differentiation of algebraic and transcendental functions and their inverses, the Mean Value and Intermediate Value Theorems, extrema and graph sketching, area and the definite integral, anti-differentiation and the Fundamental Theorem of Calculus and integration of transcendental functions. A graphing calculator will be used throughout the course.

TEXT: *Calculus*, 10th Edition, Ron Larson. ISBN: 1285057090

PLAGIARISM AND COPYRIGHT INFRINGEMENT POLICY: Work that is found to be plagiarized receives a grade of zero and often causes a student to fail a class. Documentation of plagiarism is added to the student's academic file as a violation of accepted student conduct and is subject to disciplinary action. Plagiarism is the use of another person's exact words, or their ideas written in the student's words without giving the original author credit.

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- Quote material directly without using quotation marks.
- Paraphrase the original so that many of the phrases are the same as the original. A good rule is no more than 3 or 4 words in a row should be the same as the original.
- Copy the original sentence pattern, substitution synonyms for key words.
- Neglect to indicate the source of the original material.

ASSESSMENTS:

Content	Points
Homework	150
Quizzes	200
Exams	400
Final Exam	250
Total	1000

COURSE GRADE:

Letter Grade	Range	GPA
A+	97–100	4.0
A	93-96	4.0
A−	90–92	3.7
B+	87–89	3.3
B	83–86	3.0
B−	80–82	2.7
C+	77–79	2.3
C	73–76	2.0
C−	70–72	1.7
D+	67–69	1.3
D	63–66	1.0
D−	60–62	0.7
F	Below 60	0.0

TENTATIVE COURSE OUTLINE:

Modules/Units	Content Covered	Assignments
Module 1	● 1.2: Finding Limits Graphically and Numerically ● 1.3: Evaluating Limits Analytically ● 1.4: Continuity and One-Sided Limits	Homework 1 Quiz 1
Module 2	● 1.5: Infinite Limits ● 2.1: The Derivative and the Tangent Line Problem	Homework 2 Quiz 2
Module 3	● 2.2: Basic Differentiation Rules and Rates of Change ● 2.3: Product and Quotient Rules and Higher-Order Derivatives ● 2.4: The Chain Rule ● 2.5: Implicit Differentiation	Homework 3 Quiz 3
Module 4	● 2.6: Related Rates ● 3.1: Extrema on an Interval ● 3.2: Rolle's Theorem and the Mean Value Theorem	Homework 4 Quiz 4 Exam 1
Module 5	● 3.3: Increasing and Decreasing Functions and the First Derivative Test ● 3.4: Concavity and the Second Derivative Test ● 3.5: Limits at Infinity	Homework 5 Quiz 5
Module 6	● 3.6: A Summary of Curve Sketching ● 3.7: Optimization Problems	Homework 6 Quiz 6
Module 7	● 4.1: Antiderivative and Indefinite Integration ● 4.2: Area ● 4.3: Riemann Sums and Definite Integrals ● 4.4: The Fundamental Theorem of Calculus	Homework 7 Quiz 7
Module 8	● 4.5: Integration by Substitution ● 5.1: The Natural Logarithmic Function: Differentiation ● 5.2: The Natural Logarithmic Function: Integration	Homework 8 Quiz 8 Exam 2
Module 9	● 5.4: Exponential Functions: Differentation and Integration ● 5.5: Bases Other than e and Applications ● 6.2: Growth and Decay ● 8.7: Indeterminate Form and L'Hopital's Rule	Homework 9 Quiz 9 Final Exam