DAVIS UNIVERSITY

COURSE SYLLABUS

MAC233: ANALYTIC GEOMETRY AND CALCULUS III

COURSE SYLLABUS FOR: MAC233 ANALYTIC GEOMETRY AND CALCULUS III

CREDIT HOURS: 5 CREDITS

INSTRUCTOR:

INSTRUCTOR EMAIL:

INSTRUCTOR OFFICE HOURS: by appointment

COURSE DESCRIPTION: Topics include power series and Taylor series, parametric equations, vectors in the plane and 3-space, directional derivatives and curvature, quadric surfaces, cylindrical and spherical coordinates, differential calculus of functions of two and three variables and multiple integration.

PREREQUISITES: Analytic Geometry And Calculus II

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

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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:

(Subject to change)

Module/Unit	Content Covered	Assignments & Assessment
Module 1:	9.7. Taylor Polynomials and Approximations 9.8. Power Series 9.9. Representation of Functions by Power Series 9.10. Taylor and Maclaurin Series	Homework 1 Quiz 1
Module 2:	10.2. Plane Curves and Parametric Equations 10.3. Parametric Equations and Calculus 10.4. Polar Coordinates and Polar Graphs 10.5. Area and Arc Length in Polar Coordinates	Homework 2 Quiz 2
Module 3:	11.1. Vectors in the Plane 11.2. Space Coordinates and Vectors in Space 11.3. The Dot Product of Two Vectors	Homework 3 Quiz 3
Module 4:	11.4. The Cross Product of Two Vectors in Space 11.5. Lines and Planes in Space 11.6. Surfaces in Space 11.7. Cylindrical and Spherical Coordinates	Homework 4 Quiz 4 Exam 1
Module 5:	12.1. Vector-Valued Functions 12.2. Differentiation and Integration of Vector-Valued Functions 12.3. Velocity and Acceleration	Homework 5 Quiz 5
Module 6:	12.4. Tangent Vectors and Normal Vectors 12.5. Arc Length and Curvature 13.1. Introduction to Functions of Several Variables	Homework 6 Quiz 6
Module 7:	13.2. Limits and Continuity 13.3. Partial Derivatives 13.4. Differentials 13.5. Chain Rules for Functions of Several Variables	Homework 7 Quiz 7

Module 8:	13.6. Directional Derivatives and Gradients 13.7. Tangent Planes and Normal Lines 13.8. Extrema of Functions of Two Variables 13.9. Applications of Extrema	Homework 8 Quiz 8 Exam 2
Module 9:	14.1. Iterated Integrals and Area in the Plane 14.2. Double Integrals and Volume 14.3. Change of Variables: Polar Coordinates	Homework 9 Quiz 9 Final Exam