MATH 267: CALCULUS III

1. Course Information

Subject
MATH - Mathematics

Course Number
267

School
Science, Technology, Engineering, Mathematics

Course Title
Calculus III

2. Hours

Semester Hours
4.00000

Lecture
4

Lab
0

Practicum
0

3. Catalog Description

For display in the online catalog
This course is a study of multi-dimensional analytic geometry, vectors and vector functions; derivatives with applications; multiple integrals with applications; vector calculus including Greens Theorem and Stokes Theorem.

4. Requisites

Prerequisites
MATH 266

Corequisites
None

5. Course Type

Course Fee Code
1

Course Type for Perkins Reporting
non-vocational (not approved for Perkins funding)

6. Justification

Describe the need for this course
This course is a continuation of the calculus sequence and contains topics required for a major in mathematics, as well as concepts needed by those students majoring in computer science, engineering and the sciences.

7. General Education

Will the college submit this course to the statewide General Education Coordinating Committee for approval as a course, which satisfies a general education requirement?
Yes

General Education Category
Mathematics

General Education Status
Approved

8. Consistency with the Vision and Mission Statements, the Academic Master Plan, and the strategic initiatives of the College

Please describe how this course is consistent with Ocean County College's current Vision Statement, Mission Statement, Academic Master Plan, and the strategic initiatives of the College:

	Add item
1	Providing student-centered, high quality educational experiences that prepare and empower diverse learners
2	Cultivating a technologically progressive spirit
3	Providing and supporting the delivery of high quality, relevant and emerging STEM courses
4	Reviewing and revising course content, prerequisites, learning objectives and integrated assessments to meet current trends and transferability

9. Related Courses at Other Institutions

Comparable Courses at NJ Community Colleges

Institution
Atlantic Cape CC

Course Title
Calculus III

Course Number
MATH 225

Number of Credits
4

Institution
Brookdale CC

Course Title
Calculus III

Course Number
MAT 273

Number of Credits
4

Institution
Mercer County CC

Course Title
Calculus III

Course Number
MATH 251

Number of Credits
4

Institution
Camden County College

Course Title
Calculus III

Course Number
MATH 210

Number of Credits
4

Institution
Rowan College at Burlington County

Course Title
Calculus III Analytic Geometry

Course Number
MATH 220

Number of Credits
4

Transferability of Course

Georgian Court University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MAT215, Calculus III, 4	GE	

Kean University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH 3475, Calculus III, 4	GE	

Monmouth University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MA225, Calculus with Analytic Geometry, 4	GE	

Rowan University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH 01230, Calculus III, 4	GE	

Rutgers - New Brunswick, Mason Gross School of the Arts

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
01640251, Multivariable Calculus, 4	GE	

10. Course Learning Outcomes

Learning Outcomes

	Students who successfully complete this course will be able to:
CLO1	Evaluate functions of several variables using differential and integral calculus.
CLO2	Solve application problems involving multivariable calculus
CLO3	Use differential and integral calculus to study vector functions and their applications
CLO4	Apply limits, derivatives and integrals in a multivariate environment.

11. Topical Outline

(include as many themes/skills as needed)

	Major Themes/ Skills	Assignments (Recommended but not limited to)	Assessments (Recommended but not limited to)	Course Learning Outcome(s)
TO1	Multi-dimensional Analytic Geometry	Homework exercises from text	Graded take-home assignments; In class tests	CLO1, CLO4
TO2	Vectors and vector functions	Homework exercises from text	Graded take-home assignments; In-class tests	CLO3
TO3	Partial derivatives with applications	Homework exercises from text	Graded take-home assignments; In-class tests	CLO4
TO4	Multiple integrals with applications	Homework exercises from text	Graded take-home assignments; In-class tests	CLO2, CLO3
TO5	Vector calculus including Green's Theorem, Stokes' Theorem, and Divergence Theorem	Homework exercises from text	Graded take-home assignments; In-class tests	CLO3

12. Methods of Instruction

In the structuring of this course, what major methods of instruction will be utilized?
Lecture
o Class discussion
o Group discussion
o Computer applications
o Graphing calculator applications

13. General Education Goals Addressed by this Course (this section is to fulfill state requirements)

Information

_____

Quantitative Knowledge and Skills
Yes

Related Course Learning Outcome
All

Related Outline Component
ALL

Assessment of General Education Goal (Recommended but not limited to)
Exams, Quizzes

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14. Needs

Instructional Materials (text etc.):
An appropriate textbook and/or open educational resources will be selected. Please contact the department for the current adoption.

Technology Needs:
Graphing calculator Computer software Converge.

Human Resource Needs (Presently Employed vs. New Faculty):
Presently Employed Faculty

Facility Needs:
None

Library needs:
None

15. Grade Determinants

The final grade in the course will be the cumulative grade based on the following letter grades or their numerical equivalents for the course assignments and examinations

A: Excellent

B+: Very Good

B: Good

C+: Above Average

C: Average

D: Below Average

F: Failure

I: Incomplete

R: Audit

For more detailed information on the Ocean County College grading system, please see Policy #5154.

16. Board Approval

History of Board approval dates
Reviewed/Revised: December 1990; February 27, 1996; April 30, 1996; December 1998; December 2003; May 4, 2004; Feb. 28, 2006; March 8, 2006; June 2006
Board of Trustees Approval Date: November 6, 2006
Board of Trustees Approval Date: August 24, 2009
Board of Trustees Approval Date: March 26, 2012
PLT Approval of Form: May 22, 2012
Board of Trustees Approval Date: December 12, 2019