MATH 265: CALCULUS I

1. Course Information

Subject
MATH - Mathematics

Course Number
265

School
Science, Technology, Engineering, Mathematics

Course Title
Calculus I

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 limits and continuity, differentiation formulas for algebraic trigonometric, inverse trigonometric, exponential and logarithmic functions, higher order derivatives, mean value theorem, applications of the derivative including related rates, maximum-minimum; graphing L'Hospital's Rule; antiderivates; the definite integral; integration using substitution; applications of the integral to evaluation of area; alternate definition of the natural logarithmic function.

4. Requisites

Prerequisites
MATH 192 or MATH 195

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
sequence. This is the first course in that sequence. This course is designed to provide students with the mathematical knowledge needed to successfully integrate mathematics into their chosen area of study or career path.

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	This course helps to prepare students to become intentional learners who will be able to understand and employ quantitative analysis to solve problems, and demonstrate intellectual agility in mathematics.

9. Related Courses at Other Institutions

Comparable Courses at NJ Community Colleges

Institution

Atlantic Cape CC

Course Title

Calculus I

Course Number

MATH 155

Number of Credits

4

Institution

Mercer County CC

Course Title

Calculus I

Course Number

MAT 151

Number of Credits

4

Institution

Brookdale CC

Course Title

Calculus I

Course Number

MATH 171

Number of Credits

4

Transferability of Course

Georgian Court University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MA 155 Calculus I, 4	GE	

Kean University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH 2415, Calculus I, 4	GE	

Monmouth University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MA 125, Calculus with Analytic Geometry, 4	GE	

Rowan University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH 01130, Calculus I, 4	GE	

Rutgers - New Brunswick, Mason Gross School of the Arts

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
01640151, 73, 4	GE	

Stockton University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH 2215, Calculus I, 4	GE	

10. Course Learning Outcomes

Learning Outcomes

	Students who successfully complete this course will be able to:
CLO1	Evaluate limits and continuity analytically.
CLO2	Use the rules of differentiation, including product and quotient rules, trig functions, chain rule, implicit, and logarithmic functions to evaluate higher order derivatives
CLO3	Use the application of differentiation to find extrema on an interval, and use Rolles Theorem and the Mean Value Theorem
CLO4	Apply differentiation to maxima, minimum, and inflection points
CLO5	Understand and use antiderivatives, indefinite integrals, area under a curve using the

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	Limits and their properties	Homework from the textbook	Quizzes and Tests	CLO1, CLO2
TO2	Differentiation	Homework from the textbook	Quizzes and Tests	CLO2, CLO3, CLO4, CLO5
TO3	Applications of Differentiation	Homework from the textbook	Quizzes and Tests	CLO2, CLO3, CLO4, CLO5
TO4	Integration	Homework from the textbook	Quizzes and Tests	CLO2, CLO3, CLO4, CLO5

12. Methods of Instruction

In the structuring of this course, what major methods of instruction will be utilized?

o 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

_____

_____

_____

_____

_____

_____

_____

_____

_____

Independent/Critical Thinking

Yes

Related Course Learning Outcome

All

Related Outline Component

All

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

Exams

14. Needs

Instructional Materials (text etc.):

An appropriate text will be selected. Please contact the department for current adoptions.

Technology Needs:

Graphing calculator, Computer software: Converge and/or Derive

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

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; July 2003; May 4, 2004; October 2004; November 2004; February 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
Board of Trustees Approval Date: January 26, 2016