MATH 192: PRECALCULUS II

History

1. Oct 16, 2021 by O'Connor Susan (soconnor)

Viewing: MATH 192 : Precalculus II
Last approved: Sat, 16 Oct 2021 08:00:12 GMT
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1. Course Information

Subject
MATH - Mathematics

Course Number
192

School
Science, Technology, Engineering, Mathematics

Course Title
Precalculus II

2. Hours

Semester Hours
3.00000

Lecture
3

Lab
0

Practicum
0

3. Catalog Description

For display in the online catalog
This course is a continuation of MATH 191. It includes the study of trigonometric functions and their inverses, trigonometric identities and equations and complex numbers from an algebraic, analytical, and graphical perspective. Additional topics include determinants sequences and series, analytic geometry and mathematical induction.

4. Requisites

Prerequisites
MATH 191 or appropriate placement score

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

a. Describe the need for this course.

This course is the second of a two course sequence which prepares a student for the study of calculus. It designed to provide students with the mathematical knowledge needed to successfully integrate mathematics into their chosen area of study or career path.

b. Relationship to courses within the College:

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

Trigonometry

Course Number

MATH 128

Number of Credits

4

Institution

Brookdale CC

Course Title

College Algebra & Trigonometry

Course Number

MATH 152

Number of Credits

4

Transferability of Course

Georgian Court University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MA 110, Precalculus, cresits not listed	GE	

Kean University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH 1054, Pre-Calculus, credits not listed	GE	

Monmouth University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MA 101, College Algebra, credits not listed	not listed	

Rowan University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH 1075	GE/Elective	

Rutgers - New Brunswick, Mason Gross School of the Arts

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH 191 & MATH192 as Precalculus College Mthematics, credits not listed	GE	

Stockton University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH 1100 Precalculus Mathematics, credits not listed	GE	

10. Course Learning Outcomes

Learning Outcomes

	Students who successfully complete this course will be able to:
CLO1	Demonstrate an understanding of trigonometric and inverse trigonometric functions.
CLO2	Distinguish trigonometric graphs
CLO3	Solve trigonometric applications.
CLO4	Apply the trigonometric form of complex numbers.
CLO5	Perform operations on complex numbers in trigonometric form.
CLO6	Demonstrate further proficiency in the use of a graphing utility and/or computer software.
CLO7	Demonstrate an understanding of advanced algebra topics.

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	Trigonometric functions Trigonometric functions based on the unit circle and right triangle; applications	Textbook and/or online homework assignments	Quiz and/or exam	CLO1, CLO3

TO2	Graphs of trigonometric functions Graph the six trigonometric functions and applications	Textbook and/or online homework assignments	Quiz and/or exam	CLO2, CLO3, CLO6
TO3	Inverse trigonometric Definitions, graphs and evaluating the inverse functions and applications	Textbook and/or online homework assignments	Quiz and/or exam	CLO1, CLO3
TO4	Verifying trigonometric identities Use the fundamental trigonometric functions to simplify trigonometric expressions	Textbook and/or online homework assignments	Quiz and/or exam	CLO1
TO5	Solving trigonometric equations Methods for solving equations involving trigonometric functions and applications	Textbook and/or online homework assignments	Quiz and/or exam	CLO1, CLO3
TO6	The law of sines and law of cosines Solving oblique triangles and applications	Textbook and/or online homework assignments	Quiz and/or exam	CLO1, CLO3
TO7	. Complex numbers in trigonometric form Operations with trigonometric form of complex numbers, DeMoivre's Theorem	Textbook and/or online homework assignments	Quiz and/or exam	CLO4, CLO5
TO8	8.The Instructor will choose at least two of these advanced algebraic topics to include in the course: a. Systems of Equations and Inequalities: Use the substitution and graphical methods of solving systems of linear and non-linear systems; solve applications b. Determinants: Find the determinants of square matrices, find minors and cofactors of square matrices c. Sequences and Series: Notation for sequences, find sum of series, use sequences and series to model and solve problems. d. Mathematical Induction: Use mathematical induction to prove statements e. Analytic Geometry: Convert points and equations from rectangular to polar form and vice versa, graph polar equations; graph parametric equations	Textbook and/or online homework assignments	Quiz and/or exam	CLO7

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

_____

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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.):
See department for current adoptions

Technology Needs:
Converge; Graphing calculator and/or emulator; Internet resources

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; April 2004; 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

Key: 1693