

MATH 166: TOPICS IN ALGEBRA

1. Course Information

Subject

MATH - Mathematics

Course Number

166

School

Science, Technology, Engineering, Mathematics

Course Title

Topics in Algebra

2. Hours

Semester Hours

4

Lecture

4

Lab

0

Practicum

0

3. Catalog Description

For display in the online catalog

This course is intended for students pursuing the precalculus track who have demonstrated competency in high school algebra but need to strengthen their mastery of algebraic concepts for Precalculus. Topics include equations/inequalities, functions and graphs (polynomial, radical, rational, exponential, and logarithmic), and systems of equations/inequalities. Prior Algebra II skills are strongly recommended for this course. Students can only receive credit for one of the following courses: Math 161, Math 165 or Math 166.

4. Requisites

Prerequisites

None

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 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

Proposed

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	Demonstrating the college's commitment to offer comprehensive educational programs that develop intentional learners of all ages. (Mission statement)
2	Seeking to ensure that students will thrive in an increasingly diverse and complex world. (Vision statement)
3	Preparing students for successful transfer to other educational institutions and/or for entrance into the workforce. (Academic Master Plan)
4	Seeking to empower students through the mastery of intellectual and practical skills. (Academic Master Plan)
5	Challenging students to transfer information into knowledge and knowledge into action. (Academic Master Plan)

9. Related Courses at Other Institutions

Comparable Courses at NJ Community Colleges

Institution

Atlantic Cape CC

Course Title

College Algebra

Course Number

Math 122

Number of Credits

4

Institution

Brookdale CC

Course Title

Intermediate Algebra

Course Number

Math 151

Number of Credits

4

Institution

Middlesex County College

Course Title

College Algebra

Course Number

Mat 116

Number of Credits

3

Transferability of Course**Georgian Court University**

Course Code, Title, and Credits	Transfer Category	If non-transferable; select status
MA 109, College Algebra, 3 Cr	Bridge Quantitative Analysis	

Kean University

Course Code, Title, and Credits	Transfer Category	If non-transferable; select status
Math 1000, Algebra for college students, 3-6 Cr	Foundation	

Monmouth University

Course Code, Title, and Credits	Transfer Category	If non-transferable; select status
Math 101 and MA 001, College Algebra and 100 Level Math Elective, 3-6 Cr		

Rowan University

Course Code, Title, and Credits	Transfer Category	If non-transferable; select status
Math 01123, College Algebra, 3 Cr	General Education, Mathematics	

Rutgers - New Brunswick, Mason Gross School of the Arts

Course Code, Title, and Credits	Transfer Category	If non-transferable; select status
		Will not transfer

Stockton University

Course Code, Title, and Credits	Transfer Category	If non-transferable; select status
TRCREC, 3-6 Cr	Elective, Quantitative Reasoning Intensive course	

10. Course Learning Outcomes**Learning Outcomes**

Students who successfully complete this course will be able to:	
CLO1	Solve algebraic, exponential, and logarithmic equations, including systems of equations.
CLO2	Perform operations with algebraic, exponential, and logarithmic expressions.
CLO3	Evaluate, graph, and perform operations with relations and functions, including transformations and composition.
CLO4	Apply factoring strategies to simplify algebraic expressions and solve equations.
CLO5	Identify, analyze, and graph algebraic, logarithmic, and exponential functions.
CLO6	Solve and graph algebraic inequalities, including systems, and apply methodologies to practical applications.
CLO7	Utilize correct mathematical notation in identifying function models, solving problems, and interpreting solutions.

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)
T01	Solving equations and inequalities in one variable	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO1, CLO2, CLO4, CLO6
T02	Relations and functions	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO3, CLO4, CLO5, CLO7
T03	Solving equations and inequalities in two variables	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO1, CLO3, CLO4, CLO7
T04	Systems of equations and inequalities with applications	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO1, CLO6, CLO7
T05	Polynomial expressions, equations and functions	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO1, CLO2, CLO3, CLO4, CLO5, CLO7
T06	Rational expressions, equations and functions	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO1, CLO2, CLO4, CLO5
T07	Radical expressions, equations and functions	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO1, CLO2, CLO4
T08	Quadratic equations, functions and inequalities	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO1, CLO2, CLO3, CLO4, CLO5, CLO7
T09	Exponential and Logarithmic expressions, equations and functions	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO1, CLO2, CLO3, CLO5

12. Methods of Instruction

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

Lecture, Class Discussion, Group Discussion, Applications with graphing utilities

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

10 : All

Related Outline Component

11 : All

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

Exams, Periodic common course assessment

14. Needs

Instructional Materials (text etc.):

Appropriate textbook and online resources

Technology Needs:

Access to computer labs for student use and to graphing utilities for instruction

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.