MATH 161: COLLEGE ALGEBRA

1. Course Information

Subject
MATH - Mathematics

Course Number
161

School
Science, Technology, Engineering, Mathematics

Course Title
College Algebra

2. Hours

Semester Hours
6.00000

Lecture
6

Lab
0

Practicum
0

3. Catalog Description

For display in the online catalog
This course is intended for students pursuing the pre-calculus track who need to improve their elementary algebra skills while also developing a thorough understanding of the more difficult algebraic concepts necessary for MATH 191 or MATH 195. The course topics include: polynomial, exponent, radical, and rational expressions; linear, absolute value, and quadratic equations and inequalities; rational and radical equations; graphing techniques; systems of linear and non-linear equations and inequalities; conic sections; relations and functions. Students cannot earn graduation credits for both MATH 161 and MATH 165.

4. Requisites

Prerequisites
MATH 023 with a grade of C or higher

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

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

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

Mercer County CC

Course Title

Intermediate Algebra with Applications

Course Number
MAT 135

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 Catagory	If non-transferable; select status
GENED , General Education, 6	GE	

Kean University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH 1000, College Algebra,3-6cr or 100 Level Math Elective	Electuve	

Rowan University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH 01123, College Algebra, 3	GE	

Rutgers - New Brunswick, Mason Gross School of the Arts

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
		Unable to determine status

Stockton University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
TRCREC, Quantitative Reasoning Intnsive Cours, 3-6cr	Elective	

10. Course Learning Outcomes

Learning Outcomes

	Students who successfully complete this course will be able to:
CLO1	Evaluate and simplify algebraic expressions, including those with function notation and operations
CLO2	Perform operations with polynomial, rational, and radical expressions
CLO3	Apply mathematical modeling for problem solving
CLO4	Solve equations and inequalities involving polynomials, rational and irrational expressions
CLO5	Solve compound linear inequalities
CLO6	Solve absolute value equations and inequalities
CLO7	Identify, analyze, and graph functions (constant, linear, quadratic, rational, and radical), equations, and inequalities
CLO8	Solve systems of linear and nonlinear equations and inequalities

CLO9	Use a graphics utility to produce and analyze graphs
CLO10	Analyze conic section equations and graphs
CLO11	Communicate accurate mathematical terminology and notation in written and/or oral form in order to identify function models to solve problems and interpret found 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)
TO1	Real Numbers and Algebraic Expressions	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO1, CLO2, CLO11
TO2	Solving Equations and Inequalities in one variable	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO3, CLO4, CLO5, CLO6, CLO11
TO3	Relations and Functions	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO1, CLO2, CLO7, CLO9, CLO11
TO4	Solving Equations and Inequalities in two variables	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO3, CLO4, CLO7, CLO8, CLO9, CLO11
TO5	Rational Expressions and Equations	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO1, CLO2, CLO3, CLO4, CLO9
TO6	Radical Expression and Equations	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO1, CLO2, CLO3, CLO4, CLO9
TO7	Quadratic Equations, Functions, and Inequalities	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO3, CLO4, CLO7, CLO9, CLO10, CLO11
TO8	Advanced Graphing and Systems	Practice problems assigned from the textbook or online homework system.	Quiz and/or Exam	CLO8, CLO9, CLO10, CLO11

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 Applications with Graphing Utilities

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

Information

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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, Periodic Common Course Assessment

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14. Needs

Instructional Materials (text etc.):
Appropriate textbook and online resources

Technology Needs:
Access to graphing utilities for instruction and student use

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;
May 4, 2004; December 2004;February 28, 2006; March 8, 2006; June 2006
Board of Trustees Approval Date: November 6, 2006
Board of Trustees Approval Date: March 26, 2012
Board of Trustees Approval Date: November 3, 2016

Board of Trustees Approval Date: March 29, 2018