MATH 270: DISCRETE MATHEMATICS

1. Course Information

Subject
MATH - Mathematics

Course Number
270

School
Science, Technology, Engineering, Mathematics

Course Title
Discrete Mathematics

2. Hours

Semester Hours
3.00000

Lecture
3

Lab
0

Practicum
0

3. Catalog Description

For display in the online catalog
This course is recommended for engineering, computer science, and Mathematics majors. The topics include: sets, logic, proofs, combinations, probability, graph theory and Boolean algebra.

4. Requisites

Prerequisites
MATH 265

Corequisites
MATH 266, or permission of instructor

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 has become an important tool for students in mathematics, science, computer science and/or engineering degrees to improve their mathematical skills in a variety of fields. It provides the background required for insight into more advanced courses in pure mathematics. It is a required course for mathematics and computer science majors at many four-year institutions.

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

Discrete Mathematics

Course Number

MAT 153

Number of Credits

4

Institution

Brookdale CC

Course Title

Discrete Mathematics

Course Number

MATH 226

Number of Credits

4

Institution

Rowan College at Burlington County

Course Title

Discrete Mathematics

Course Number

MTH 226

Number of Credits
3

Institution
Camden County College

Course Title
Discrete Mathematics

Course Number
MTH 129

Number of Credits
4

Institution
Mercer County CC

Course Title
Discrete Mathematical Structures

Course Number
COS 204

Number of Credits
4

Transferability of Course

Georgian Court University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MA210, Discrete Mathematics, 3	GE	

Kean University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH2110 K1K3, Discrete Structures, 3	GE	

Monmouth University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MA120, Intro to Mathematical Reasoning, 3	GE	

Rowan University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH03150, Discrete Math, 3	GE	

Rutgers - New Brunswick, Mason Gross School of the Arts

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
21640237, Discrete Structures, 3	GE	

Stockton University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH2225, Discrete Mathematics, 3	GE	

10. Course Learning Outcomes

Learning Outcomes

	Students who successfully complete this course will be able to:
CLO1	Solve problems involving set operations.
CLO2	Develop skills of mathematical logic.
CLO3	Demonstrate proofs using mathematical induction analysis.
CLO4	Explore combinatorics and probability problems.
CLO5	Utilize graph theory and its applications

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	Sets	Lecture, discussion, group work	Graded take-home assignments, In-class tests	CLO1
TO2	Logic	Lecture, discussion, group work	Graded take-home assignments, In-class tests	CLO2
TO3	Probability	Lecture, discussion, group work	Graded take-home assignments, In-class tests	CLO4
TO4	Combinatorics	Lecture, discussion, group work	Graded take-home assignments, In-class tests	CLO4
TO5	Proofs	Lecture, discussion, group work	Graded take-home assignments, In-class tests	CLO3
TO6	Craph Theory	Lecture, discussion, group work	Graded take-home assignments, In-class tests	CLO1
TO7	Boolean Algebra	Lecture, discussion, group work	Graded take-home assignments, In-class tests	CLO1

12. Methods of Instruction

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

Lecture

o Handouts

o Group discussions

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)

Graded take-home assignments, In-class tests

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14. Needs

Instructional Materials (text etc.):
An appropriate textbook or open educational resource will be selected. Please contact the department for current adoptions

Technology Needs:
None

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: March 26, 2012
Board of Trustees Approval Date: January 26, 2016
Board of Trustees Approval Date: December 12, 2019