MATHEMATICS CONCENTRATION

Program Description

The **Mathematics Concentration** within the Associate in Science in Mathematics and Pre-Engineering is designed for students who plan to transfer to a four-year institution to pursue a bachelor's degree in mathematics, applied mathematics, statistics, or a related quantitative field.

This concentration provides a strong foundation in calculus, mathematical reasoning, and analytical problem-solving. Students explore mathematical concepts that support scientific discovery, technological innovation, and data-driven decision-making. Coursework emphasizes logical thinking, quantitative analysis, and the use of mathematical methods to model and solve complex problems.

The program prepares students for upper-level coursework in mathematics and related disciplines that rely on advanced quantitative and analytical skills.

Transfer Information

The Mathematics concentration is structured to align with bachelor's degree programs in mathematics, applied mathematics, statistics, and related STEM fields.

Students are encouraged to work closely with faculty and Advising & Transfer Services to ensure coursework aligns with the requirements of their intended transfer institution. Because mathematics programs require carefully sequenced coursework in calculus and advanced mathematics, students should follow the recommended course sequence to remain on track for transfer.

Students planning to transfer within New Jersey should explore the "Transfer Programs" feature on NJ Transfer (www.njtransfer.org (http://www.njtransfer.org)) to review articulation agreements and institutional requirements.

Career Information

The A.S. in Mathematics and Pre-Engineering – Mathematics Concentration is designed primarily for transfer. A bachelor's degree is typically required for professional roles in mathematics and related quantitative fields.

With further education, graduates may pursue careers such as:

- Data Analyst or Data Scientist
- Actuary
- Operations Research Analyst
- Statistician
- Financial Analyst

Students are encouraged to consult with faculty and Career Services early in their academic journey to explore transfer pathways, internships, and career opportunities in mathematics, analytics, and technology-driven fields.

Fall One		Credit Hours
ENGL 151	English I	3
STSC 150	Student Success Seminar	2
MATH 166	Topics in Algebra	4
CHEM 181 & 181L	General Chemistry I Lecture and General Chemistry I Lab	4
Technology Gen. Ed. Requirement (https://catalog.ocean.edu/academic-information/general-education/)		3
CSIT 124	Introduction to Programming (Recommended)	
	Credit Hours	**16**
Spring One		
ENGL 152	English II	3
MATH 196	Precalculus	4
MATH 157	Introduction to Data Science	4
CHEM 182 & 182L	General Chemistry II Lecture and General Chemistry II Lab	4
	Credit Hours	**15**
Summer One		
MATH 265	Calculus I	4
	Credit Hours	**4**
Fall Two		
MATH 266	Calculus II	4
PHYS 281 & 281L	General Physics I Lecture and General Physics I Lab	4
Humanities Gen. Ed. Requirement (https://catalog.ocean.edu/academic-information/general-education/)		3
Social Science Gen. Ed. Requirement (https://catalog.ocean.edu/academic-information/general-education/)		3
	Credit Hours	**14**
Spring Two		
MATH 267	Calculus III	4
PHYS 282 & 282L	General Physics II Lecture and General Physics II Lab	4
MATH 281	Differential Equations	4
Humanities Gen. Ed. Requirement (https://catalog.ocean.edu/academic-information/general-education/)		3
	Credit Hours	**15**
	Total Credit Hours	**64**
Fall One		**Credit Hours**
ENGL 151	English I	3
STSC 150	Student Success Seminar	2
MATH 196	Precalculus	4
CHEM 181 & 181L	General Chemistry I Lecture and General Chemistry I Lab	4
Technology Gen. Ed. Requirement (https://catalog.ocean.edu/academic-information/general-education/)		3
CSIT 124	Introduction to Programming (Recommended)	
	Credit Hours	**16**
Spring One		
ENGL 152	English II	3
MATH 265	Calculus I	4
MATH 157	Introduction to Data Science	4
CHEM 182 & 182L	General Chemistry II Lecture and General Chemistry II Lab	4
	Credit Hours	**15**
Fall Two		
MATH 266	Calculus II	4
PHYS 281 & 281L	General Physics I Lecture and General Physics I Lab	4

Humanities Gen. Ed. Requirement (https://catalog.ocean.edu/academic-information/general-education/)		3
Social Science Gen. Ed. Requirement (https://catalog.ocean.edu/academic-information/general-education/)		3
	Credit Hours	**14**
Spring Two		
MATH 267	Calculus III	4
MATH 281	Differential Equations	4
PHYS 282 & 282L	General Physics II Lecture and General Physics II Lab	4
Humanities Gen. Ed. Requirement (https://catalog.ocean.edu/academic-information/general-education/)		3
	Credit Hours	**15**
	Total Credit Hours	**60**

		Credit Hours
Fall One		
ENGL 151	English I	3
STSC 150	Student Success Seminar	2
CSIT 165	Programming I	4
MATH 265	Calculus I	4
CHEM 181 & 181L	General Chemistry I Lecture and General Chemistry I Lab	4
	Credit Hours	**17**
Spring One		
ENGL 152	English II	3
MATH 266	Calculus II	4
MATH 157	Introduction to Data Science	4
CHEM 182 & 182L	General Chemistry II Lecture and General Chemistry II Lab	4
	Credit Hours	**15**
Fall Two		
MATH 267	Calculus III	4
PHYS 281 & 281L	General Physics I Lecture and General Physics I Lab	4
Humanities Gen. Ed. Requirement (https://catalog.ocean.edu/academic-information/general-education/)		3
Social Science Gen. Ed. Requirement (https://catalog.ocean.edu/academic-information/general-education/)		3
	Credit Hours	**14**
Spring Two		
MATH 270	Discrete Mathematics	3
MATH 281	Differential Equations	4
PHYS 282 & 282L	General Physics II Lecture and General Physics II Lab	4
Humanities Gen. Ed. Requirement (https://catalog.ocean.edu/academic-information/general-education/)		3
	Credit Hours	**14**
	Total Credit Hours	**60**