

Mathematics

MATHEMATICS DEPARTMENT

Associate in Science (A.S.) Degree

This program parallels the first two years of a baccalaureate degree program in mathematics. The mathematics major prepares students, upon graduation, to transfer to a four-year college or university to pursue professional careers requiring quantitative reasoning and analytical thinking. Traditional mathematics occupations consist of teaching positions in schools and colleges or research positions in universities or industry. Other related mathematics fields include statistics, survey and market research, operations research, computer systems design and programming, economics and finances, and robotics and aerodynamics. Careers in applied mathematics usually focus on developing mathematical models for technical and scientific data, whether in physics, chemistry, biology, engineering or medicine.

Are there any requirements that must be satisfied before taking courses in the major?

Students must demonstrate proficiency in elementary (MAT 013 or MAT 013A/MAT 013B) and intermediate (MAT 014 or MAT 014A/MAT 014B) algebra, as well as precalculus (MAT 129 or MAT 129A/MAT 129B). In addition, they must successfully complete all courses required by the College's placement tests, and fulfill the science course prerequisites. The science courses of biology and chemistry require a high school laboratory course with a minimum grade of "C" or the equivalent developmental science courses (BIO 010, CHM 010).

Can students transfer to a four-year college or university?

The Statewide Transfer Agreement for New Jersey ensures that students who earn an A.A. or A.S. degree at a community college will have those credits fully transferable to a New Jersey public four-year institution, will have completed half of the credits required for a basic four-year degree and will have completed all of the lower division general education requirements. In addition, articulation agreements with private institutions may provide similar transfer provisions. Students should discuss the transfer process with an advisor.

How long will it take to complete this degree?

Once students complete developmental coursework (if needed), the degree can be completed in two years of full-time study. They can shorten the amount of time by taking courses in the summer and winter sessions.

Questions?

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MATHEMATICS SCIENCE TRANSFER

Associate in Science (A.S.) Degree - MAT.AS

Below are required courses and recommended course groupings and sequences for program completion.

Courses may have prerequisite and corequisite requirements. Check course descriptions for details.

Courses	Credits	Requisites / Comments
<i>Semester I</i>		
BIO 123 General Biology I OR CHM 121 General Chemistry I – Lecture	4	One year of high school laboratory biology or BIO 010 and one year of high school laboratory chemistry or
CHM 125 General Chemistry I – Lab	3	Two years of high school algebra and geometry or MAT 013, MAT 014 and one year of high school CHM 010.
CHM 125 General Chemistry I – Lab	1	Two years of high school algebra and geometry or MAT 013, MAT 014 and one year of high school chemistry or CHM 010.
ENG 121 English Composition I	3	A passing score on the College's placement test or a grade of "C" or better in ENG 010.
MAT 131 Analytic Geometry & Calculus I OR MAT 131A	4	Appropriate score on the College's placement test and/or satisfactory score on the diagnostic to be followed by MAT 131B examination, "C" or better in MAT 129 or MAT 129A/MAT 129B, or departmental approval.
____ General Education Social Science Elective (GE SS)	3	
____ Physical/Health Education Elective	1-3	
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<i>Semester II</i>		
BIO 124 General Biology II OR CHM 122 General Chemistry II – Lecture	4	BIO 123
CHM 126 General Chemistry II – Lab	3	CHM 121
CHM 126 General Chemistry II – Lab	1	CHM 121, CHM 125
ENG 122 English Composition II	3	A grade of "C" or better in ENG 121
MAT 132 Analytic Geometry & Calculus II	4	MAT 131, MAT 131A/MAT 131B or equivalent
____ Computer Science Elective	3-4	Choose CSC 109 or higher
____ General Education Social Science Elective (GE SS)	3	
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<i>Semester III</i>		
MAT 233 Analytic Geometry & Calculus III	4	MAT 132 or equivalent
Mathematics Elective	4	Choose from MAT 206, MAT 210, MAT 257, MAT 285
PHY 123 General Physics I – Lecture (GE MST)	3	MAT 129 or MAT 129A/MAT 129B
PHY 125 General Physics I – Lab (GE MST)	1	MAT 129 or MAT 129A/MAT 129B Students may substitute PHY 133/135 - PHY 134/136 for PHY 123/125 - PHY 124/126.
____ Elective	3	Except SSD 101
____ General Education Humanities Elective (GE HUM)	3	
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<i>Semester IV</i>		
MAT 234 Differential Equations	4	MAT 233 or approval of department chairperson
Mathematics Elective	4	Choose from MAT 206, MAT 210, MAT 257, MAT 285
PHY 124 General Physics II – Lecture (GE MST)	3	PHY 123
PHY 126 General Physics II – Lab (GE MST)	1	PHY 125 Students may substitute PHY 133/135 - PHY 134/136 for PHY 123/125 - PHY 124/126.
____ General Education Humanities Elective (GE HUM)	3	

Total Credits: 65-68

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