

MATHEMATICS, AREA OF CONCENTRATION IN ARTS & SCIENCES (AS)

Award: Associate of Science Degree

No. of credits required: 60

For more information: Contact Professor Chis Jones, cjones@harford.edu (sking@harford.edu); Admissions, 443-412-2055; or stem@harford.edu.

Program Description

This program provides a solid foundation for those who wish to transfer to a Bachelor’s degree program in pure mathematics, applied mathematics, actuarial sciences and risk management, statistics, or mathematics secondary education. Mathematicians use mathematical theory, computational techniques, algorithms, numerical analyses, and the latest technology to solve economic, scientific, engineering, physics, and business problems. Students in this program will attain proficiency in using mathematical techniques and computational ability, explaining the processes used in solving problems, modeling applications settings with mathematics, and communicating and interpreting numerical results.

Program Goals

Upon successful completion of the Mathematics AS degree, the student will be able to:

1. Solve mathematical problems analytically, geometrically, and numerically.
2. Apply mathematical models and techniques to real-world problems in multiple disciplines.
3. Employ appropriate technology and programming techniques to solve mathematical problems.
4. Communicate mathematical ideas and arguments effectively.

Transfer Information

Students who plan to transfer to a four-year college or university should review the requirements of that institution. If they are significantly different than the requirements of the AS in Mathematics, the student should consult with an academic advisor.

Employment Information

As of January 2025, the Bureau of Labor Statistics projects an 11% growth in employment for mathematicians between 2023 and 2033 which is faster than the average occupational growth rate, with an estimated 2,500 new jobs. Mathematicians are employed in careers that apply mathematical theories and techniques to solve practical problems in business, engineering, the sciences, and other fields. They also design surveys, experiments, or opinion polls to collect data and develop mathematical or statistical models to analyze data. Mathematicians may also serve in roles where they interpret data and communicate analyses to technical and nontechnical audiences.

Degree Requirements

Recommended Course Sequence

First Semester		Credits
ENG 101	English Composition (GE)	3
MATH 203	Calculus I (GM)	4
Arts/Humanities Elective (GAH)		3
Behavioral/Social Science Elective (GB) (https://catalog.harford.edu/general-education/#behavioral-social-science)		3
Physical Education Elective		1
Credits		14
Second Semester		Credits
MATH 204	Calculus II (GM)	4
PHYS 201	General Physics I: Mechanics (GL)	4
General Electives ¹		6
Behavioral/Social Science Elective (GB) (https://catalog.harford.edu/general-education/#behavioral-social-science)		3
Credits		17
Third Semester		Credits
CSI 131	Computer Science I	4
MATH 206	Calculus III	4
PHYS 204	General Physics II: Heat, Electricity and Magnetism (GL)	4
MATH 217	Linear Algebra	4
Credits		16
Fourth Semester		Credits
MATH 208	Elementary Differential Equations	3
General Electives ²		7
Arts/Humanities Elective (GAH)		3
Credits		13
Total Credits		60

¹ It is recommended that the student take CIS 115 Fundamentals of Programming or CSI 130 Introduction to Concepts in Computer Science.

² It is recommended that the student take MATH 210 Discrete Structures.

General Education Degree Requirements

Note: The following codes identify courses which satisfy the General Education Degree Requirements:

- Behavioral/Social Science (GB)
- English Composition (GE)
- Arts/Humanities (GAH)
- Interdisciplinary and Emerging Issues (GI)
- Biological/Physical Laboratory Science (GL)
- Mathematics (GM)
- Biological/Physical Science (GS)