MATHEMATICS AREA OF CONCENTRATION, SCIENCE AS
Total Credits: 60
Catalog Edition: 2024-2025

Program Description

The mathematics area of concentration is a transfer program that provides the first two years of courses necessary for a four-year baccalaureate degree in mathematics. **This program can be completed either on campus or online.**

Program Outcomes

Upon completion of this program, a student will be able to:

- Effectively communicate the concepts of single and multivariable calculus, differential equations, and linear algebra using appropriate mathematical language.
- Apply mathematical approaches from single and/or multivariable calculus, differential equations, and linear algebra to analyze and solve problems in mathematics and other disciplines.
- Appropriately use current mathematical software, such as Matlab or MAPLE, for tasks in multivariable calculus, differential equations, and/or linear algebra.

Program Advisors

Germantown

- Dr. Zine Boudhraa, 240-567-5192, zine.boudhraa@montgomerycollege.edu

Rockville

- Dr. Zine Boudhraa, 240-567-5192, zine.boudhraa@montgomerycollege.edu

Takoma Park/Silver Spring

- Dr. Zine Boudhraa, 240-567-5192, zine.boudhraa@montgomerycollege.edu

For more information, please visit https://www.montgomerycollege.edu/academics/programs/science/mathematics-as-degree.html

To view the Advising Worksheet, please visit https://www.montgomerycollege.edu/_documents/counseling-and-advising/advising-worksheets/current-catalog/412b.pdf

2024-2025

Program Advising Guide
An Academic Reference Tool for Students

412B

MATHEMATICS AREA OF CONCENTRATION, SCIENCE AS: 412B
ASSOCIATE OF SCIENCE: 412B

MATHEMATICS AREA OF CONCENTRATION, SCIENCE AS

Suggested Course Sequence

A suggested course sequence for full-time students follows. All students should review this advising guide and consult an advisor.

First Semester

ENGL 101 - Introduction to College Writing *3 semester hours* *

MATH 181 - Calculus I *4 semester hours* (MATF)

Arts Distribution *3 semester hours (ARTD)*

Behavioral and Social Sciences Distribution*3 semester hours (BSSD)* **

Humanities Distribution*3 semester hours (HUMD)*

Third Semester

MATH 117 - Elements of Statistics *3 semester hours* (GEEL)

OR

COMM 108 - Foundations of Human Communication *3 semester hours* (GEEL)

OR

COMM 112 - Business and Professional Speech Communication *3 semester hours* (GEEL)

OR

General Education Elective *3 semester hours (GEEL)*

MATH 280 - Multivariable Calculus *4 semester hours*

Natural Sciences Distribution with Lab*4 semester hours (NSLD)* ‡

Program Electives *4 semester hours* †

Second Semester

English Foundation*3 semester hours (ENGF)*

MATH 182 - Calculus II *4 semester hours*

Program Electives *4 semester hours* †

Natural Sciences Distribution with Lab*4 semester hours (NSLD)* ‡

Fourth Semester

MATH 282 - Differential Equations *3 semester hours*

MATH 284 - Linear Algebra *4 semester hours*

Program Electives *4semester hours*†

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)**

Total Credit Hours: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or program elective.

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

‡ Students are strongly encouraged to take two consecutive lab sciences courses.

† Students should choose electives carefully based on the requirements of their intended transfer institution. Students are encouraged to take a two-semester sequence of courses that fulfills their transfer goals. Program electives include: ACCT 221, ACCT 222, BIOL 150, BIOL 151, BIOL 210, CHEM 131, CHEM 132, CHEM 203, CHEM 204, CMSC 140, CMSC 203, CMSC 207/MATH 207, COMM 108, DATA 101, DATA 110, DATA 201, DATA 205, ECON 201, ECON 202, ENEE 140, ENES 102, ENES 206, ENES 220, ENES 221, ENES 240, MATH 117, MATH 165, MATH 217, PHYS 161, PHYS 233, PHYS 234, PHYS 262, or PHYS 263. Students must take at least one 200 level program elective.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

This program can be completed either on campus or online.

Transfer Opportunities

Montgomery College has partnerships with multiple four-year institutions and the tools to help you transfer. To learn more, please visit https://www.montgomerycollege.edu/transfer or http://artsys.usmd.edu .

Get Involved at MC!

Employers and Transfer Institutions are looking for experience outside the classroom.

MC Student Clubs and Organizations: https://www.montgomerycollege.edu/life-at-mc/student-life/

Related Careers

As illustrated by the career profiles published by the Mathematical Association of America, Mathematics prepares you for a career in a diverse range of areas, and as science and technology become integrated into more and more aspects of our lives, employers are clamoring for employees with mathematical skills and problem-solving abilities. Some careers that a math major is especially good preparation for are the following:

Jobs in Industry or the Private Sector. There are numerous jobs in the private sector that desperately need math majors. These areas include: Actuarial Science, Computer Analyst or programmer, Economist, Engineering Analyst, Information Scientist, Marketing Research Analyst, Mathematician, Meteorologist, Numeral Analyst, Operations Research, Statistician, and Systems Analyst.

Government Jobs. There are a variety of government positions that require a mathematics degree. In particular, the National Security Agency (NSA) is the largest employer of mathematicians whose skills are useful to help create and break codes, analyze intelligence data, and perform signal analysis. They hire people with a variety of technical degrees at all levels (undergraduate and graduate).

Mathematics Teacher, Mathematics Professor, or Professional Mathematician. These are perhaps the most obvious careers that a math major can pursue. If you want to be a mathematics professor or a professional mathematician, you will need to go to graduate school in mathematics.

Career Services

Montgomery College offers a range of services to students and alumni to support the career planning process. To learn more, please visit https://www.montgomerycollege.edu/career

Career Coach

A valuable online search tool that will give you the opportunity to explore hundreds of potential careers or job possibilities in Maryland and the Washington D.C. metropolitan area. Get started today on your road to a new future and give it a try. For more information, please visit https://montgomerycollege.emsicc.com

Notes:

Visit https://www.montgomerycollege.edu/academics/stem/mathematics-statistics-data-science/ for more information on transfer requirements and suggested course sequences for specific universities and colleges.