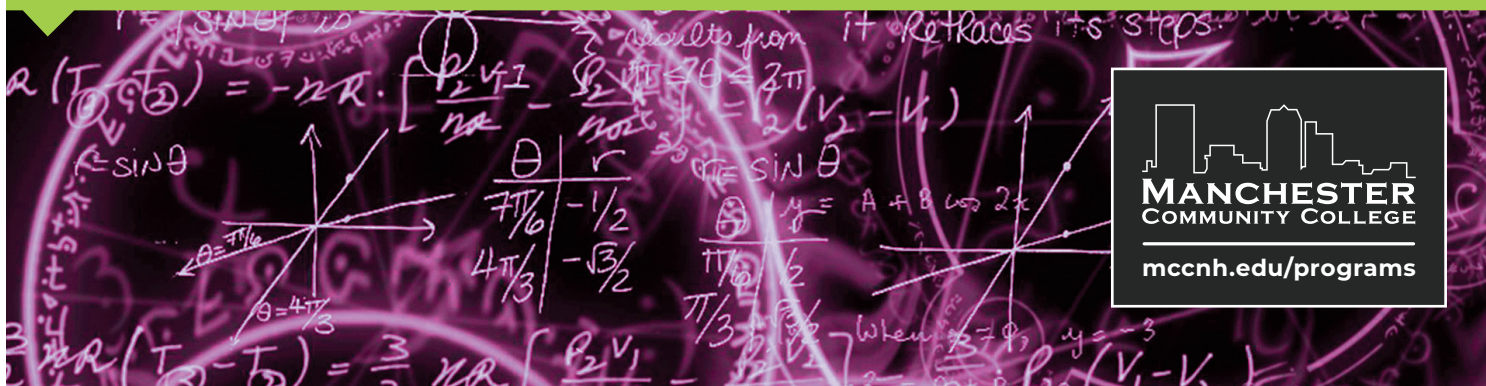


# MATHEMATICS



MANCHESTER  
COMMUNITY COLLEGE

[mccnh.edu/programs](http://mccnh.edu/programs)

## Mathematics

### Overview

Labor market trends in New Hampshire and across the country increasingly highlight the demand for skilled professionals in STEM disciplines. Our Mathematics degree program is designed to cater to this growing need, preparing you for successful transfer to a 4-year degree program and subsequent career in various STEM fields.

### Degree & Certificate Options

The Mathematics Associate of Science (A.S.) degree program offers three distinct degree pathways and a Data Analytics certificate. Each is tailored to different career objectives and areas of interest. The degree pathways allow you to align your studies with specific career goals in fields like engineering, research, mathematics education and more. The pathways are:

- Mathematics — Engineering Pathway
- Mathematics — Applied Mathematics Pathway
- Mathematics — Physics Pathway

### Program Goal

The Mathematics degree is designed for students who are planning to pursue a 4-year degree in Mathematics, Engineering, Physics or the sciences. The degree curriculum includes both the general education and mathematics courses typically required during the first two years of a bachelor's concentration in those disciplines.

The program prepares you to pursue a bachelor's degree in mathematics education, engineering and related disciplines. Courses are also useful if you plan to pursue a career in business, finance, strategic planning or quality improvement. This flexibility ensures that you are well-equipped for a diverse range of professional opportunities.

### Acquired Skills

Graduates of the Mathematics degree program will be able to:

- Demonstrate applicable problem solving ability in completing mathematical practices.
- Apply mathematical principles to other disciplines including physical and life sciences, technologies, social sciences and business.
- Communicate in the language of mathematics effectively using appropriate mathematical terminology both verbally and written.
- Use logical reasoning in understanding mathematical proofs.

### Outcomes

#### Potential Jobs

With a Mathematics degree you can find work as a:

- Mathematician
- Mathematics Educator
- Data Analyst
- Physicist
- Statistician
- Engineer
- Survey Technician
- Business/Financial Analyst

#### Transfer Opportunities

Students in the Mathematics program can successfully transfer to many colleges and universities around the country, including:

- Boston University
- Emerson College
- UNH College of Professional Studies
- Keene State College
- Plymouth State University
- Rivier University
- Southern NH University
- University of New Hampshire
- University of Massachusetts
- ...and many more!

# Mathematics Degree

## Degree Program - First Year

### Fall Semester

Course Code	Title	TH	LAB	CR
MATH204M	Calculus I	4	0	4
PHYS210M	University Physics I	3	3	4
ENGL110XM or ENGL110M	College Composition I with Corequisite or College Composition I	4	0	4
	Open Elective	3	0	3
FYE100M	MCC Essentials	1	0	1
<b>Sub-Total Credits</b>		<b>15</b>	<b>3</b>	<b>16</b>

### Spring Semester

Course Code	Title	TH	LAB	CR
MATH214M	Calculus II	4	0	4
PHYS220M	University Physics II	3	3	4
	<b>Physics Pathway:</b> CHEM115M General Chemistry I	3	3	3
Pathway Option	<b>Mathematics and Engineering Pathway -</b> <i>choose one: CIS122M, MATH210M,</i> <i>ROBO211M, DATA215M</i>	3	0	3
	Foreign Language/Humanities/Fine Arts Elective	3	0	3
<b>Sub-Total Credits</b>		<b>13</b>	<b>3/6</b>	<b>14</b>

## Degree Program - Second Year

### Fall Semester

Course Code	Title	TH	LAB	CR
MATH218M	Linear Algebra	4	0	4
MATH222M	Multidimensional Calculus	3	2	4
	Social Science Elective	3	0	3
	<b>Mathematics Pathway:</b> Open Elective	3	3	3
Pathway Option	<b>Engineering Pathway:</b> ADMT225M Statics	3	0	3
	<b>Physics Pathway:</b> PHYS230M Modern Physics	3	3	4
<b>Sub-Total Credits</b>		<b>13</b>	<b>2/5</b>	<b>14/15</b>

### Spring Semester

Course Code	Title	TH	LAB	CR
MATH220M	Differential Equations	4	0	4
	<b>Mathematics and Engineering Pathway:</b> Lab Science Elective	3	3	4
	<b>Mathematics and Physics Pathway:</b> MATH299M Mathematics Capstone	4	0	4
	<b>Mathematics Pathway:</b> MATH215M Mathe- matical Proofs	4	0	4
Pathway Option	<b>Engineering Pathway:</b> ADMT112M Intro- duction to Engineering Design and Solid Modeling	3	4	4
	<b>Engineering Pathway:</b> Mathematics Elective	4	0	4
	<b>Physics Pathway:</b> PHYS225M thermody- namics and Statistical mechanics	4	0	4
	<b>Physics Pathway:</b> MATH210M Mathematics and Applications in MATLAB	3	2	4
<b>Sub-Total Credits</b>		<b>15</b>	<b>3</b>	<b>16</b>
<b>Total Credits</b>				<b>60/61</b>

# Applied Data Analytics Certificate

Data is an increasingly important part of our lives; from business operations and processes to environmental systems, social sciences, genetics and health care, data allows us to gain important insights and make useful predictions. Data Analytics comprises all the academic disciplines related to managing data as a resource; such as visualization, machine learning, statistical applications, data mining, predictive analytics and database management. Upon completion, you will have foundational understanding of and competency with many facets of effective communication with data.

## Certificate Requirements

Course Code	Title	TH	LAB	CR
MATH202M	Probability and Statistics I	4	0	4
MATH212M	Probability and Statistics II	4	0	4
DATA215M	Applied Data Analytics	3	2	4
CIS126M	Introduction to Python	2	2	3
	Elective - <i>choose one:</i> <i>CIS113M, CIS220M, CIS233M, MATH218M</i>	2/3	2/3	3/4
<b>Total Credits</b>				<b>18/19</b>

## The Mathematics Degree Pathways

These degrees and the courses within them are carefully selected to align with the typical mathematics requirements found in the first two years of a bachelor's degree program in each field of study.

### Engineering Pathway

The Engineering Pathway of the Mathematics degree program is structured to cater to students aiming to pursue a 4-year degree in engineering, offering a curriculum that encompasses both general mathematics concentration and specialized mathematics courses.

### Mathematics Pathway

The Mathematics Pathway of the Mathematics degree program is structured to cater to students aiming to pursue a 4-year degree in Mathematics or Mathematics Education, offering a curriculum that encompasses both general mathematics concentration and specialized mathematics courses.

### Physics Pathway

The Physics Pathway of the Mathematics degree program is for students aiming to pursue a four-year degree in Physics or Physics Education, offering a curriculum that encompasses both general mathematics concentration and specialized mathematics and physics courses.

### Want to Learn More? View Each Pathway's Curriculum!



MATHEMATICS

Scan the QR code or go to [mccnh.edu/programs/mathematics/](http://mccnh.edu/programs/mathematics/) to learn more about the MCC Mathematics Program and each degree pathway's curriculum! Use the search to see other programs and get more information about the Data Analytics certificate!

**All courses and degree requirements are subject to change. For the most current information on MCC programs, see [mccnh.edu/programs](http://mccnh.edu/programs).**