2024-25 ACADEMIC PROGRAMS

MATH AND SCIENCE (ASMSAS)

Associate in Science

This program prepares students to transfer to a four-year college or university to complete a bachelor's degree in actuarial science, biology, chemistry, math, or pharmacy. The program will give students a solid foundation in math and science. Students should obtain program requirements and transfer equivalencies from the college to which they are transferring.
Complete the requirements for one of the following concentrations. These concentrations may also list courses used to meet General Education requirements.

This is a **high demand, high skill** and **high wage** program as defined by the Michigan Community College Network.

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Program is also available online

Description

This program prepares students to transfer to a four-year college or university to complete a bachelor's degree in actuarial science, biology, chemistry, math, or pharmacy. The program will give students a solid foundation in math and science. Students should obtain program requirements and transfer equivalencies from the college to which they are transferring.

Complete the requirements for one of the following concentrations. These concentrations may also list courses used to meet General Education requirements.

Biology/Pre-Medicine (BMED)
CEM 111 General Chemistry I
CEM 122 General Chemistry II
CEM 211 Organic Chemistry I
CEM 222 Organic Chemistry II
Elective: BIO 111, BIO 208, BIO 215, BIO 227 or BIO 237

Chemistry/Pre-Medicine (CMED)
CEM 111 General Chemistry I
CEM 122 General Chemistry II
CEM 211 Organic Chemistry I
CEM 222 Organic Chemistry II
MTH 197 Linear Algebra

Mathematics (MATH)
MTH 160 Basic Statistics
MTH 191 Calculus I
MTH 192 Calculus II
MTH 197 Linear Algebra
MTH 293 Calculus III
MTH 295 Differential Equations

Pre-Actuarial Science (PPAS)
ECO 211 Principles of Economics I
ECO 222 Principles of Economics II
MTH 191 Calculus I
MTH 192 Calculus II
MTH 197 Linear Algebra
MTH 293 Calculus III

Pre-Pharmacy (PPHA)
Two Restricted Electives in Biology (see below)
CEM 211 Organic Chemistry I
CEM 222 Organic Chemistry II
PHY 111 General Physics I
PHY 122 General Physics II
Biology Restricted Electives for Pre-Pharmacy (PPHA): BIO 111, BIO 161, BIO 162, BIO 208, BIO 237, BIO 215 or BIO 227
Optional Transfer Courses for Pre-Pharmacy (PPHA): MTH 160, MTH 192, along with other Biology restricted electives. See a program advisor to select appropriate Biology courses.

Articulation

This program will fulfill the Michigan Transfer Agreement (MTA) requirements provided the student takes two science courses from two different disciplines. One course must have a lab component. Students must have MTA posted on their transcripts by the WCC Student Records Office.

Admissions Requirements

- Students must have an Academic Math Level of 7 to begin the math sequence. Two years of high school algebra and one year of high school pre-calculus are recommended to prepare for this program.
- The biology and chemistry concentrations require one year of high school chemistry or CEM 101 with a "C" or better to enroll in CEM 111.

Select a concentration for requirements and total credits required for program.

Concentrations

Biology/Pre-Medicine (BMED)

First Semester

Class	Title	Minimum Credits
BIO 162	General Biology II Cells and Molecules	4
CEM 111	General Chemistry I	4
MTH 176 or	College Algebra	
MTH 191	Calculus I*	4
Elective	Elective(s) to reach minimum 60 credits	5
Total		17

Second Semester

Class	Title	Minimum Credits
BIO 161	General Biology I Ecology and Evolution	4
CEM 122	General Chemistry II	4
ENG 111	Composition I	4
MTH 160 or	Basic Statistics**	
MTH 192	Calculus II	4
Total		16

Third Semester

Class	Title	Minimum Credits
CEM 211	Organic Chemistry I	4
Elective	Speech/Comp. Elective(s)	3
Elective	Soc. Sci. Elective(s) 1	3
Elective	Select one course from the following: BIO 111, BIO 208***, BIO 215, BIO 227 or BIO 237	4
Total		14

Fourth Semester

Class	Title	Minimum Credits
CEM 222	Organic Chemistry II	4
Elective	Arts/Human. Elective(s) 1	3
Elective	Soc. Sci. Elective(s) 2	3
Elective	Arts/Human. Elective(s) 2	3
Total		13

Total Credits Required: 60

Chemistry/Pre-Medicine (CMED)

First Semester

Class	Title	Minimum Credits
CEM 111	General Chemistry I	4
MTH 191	Calculus I	5
PHY 111	General Physics I	4
Elective	Elective(s) to reach minimum 60 credits	3
Total		16

Second Semester

Class	Title	Minimum Credits
CEM 122	General Chemistry II	4
ENG 111	Composition I	4
MTH 192	Calculus II	4
PHY 122	General Physics II	4
Total		16

Third Semester

Class	Title	Minimum Credits
CEM 211	Organic Chemistry I	4
Elective	Speech/Comp. Elective(s)	3
MTH 197	Linear Algebra	4
Elective	Soc. Sci. Elective(s) 1	3
Total		14

Fourth Semester

Class	Title	Minimum Credits
Elective	Elective(s) to reach minimum 60 credits	1
CEM 222	Organic Chemistry II	4
Elective	Arts/Human. Elective(s) 1	3
Elective	Soc. Sci. Elective(s) 2	3
Elective	Arts/Human. Elective(s) 2	3
Total		14

Total Credits Required: 60

Mathematics (MATH)

First Semester

Class	Title	Minimum Credits
Elective	Nat. Sci. Elective(s)	3
MTH 191	Calculus I	5
Elective	Select one course from the following: CPS 120, CPS 141, CPS 161 or CPS 171	3
ENG 111	Composition I	4
Total		15

Second Semester

Class	Title	Minimum Credits
Elective	Nat. Sci. Lab Elective(s)	3
MTH 160	Basic Statistics	4
MTH 192	Calculus II	4
Elective	Soc. Sci. Elective(s) 1	3
Total		14

Third Semester

Class	Title	Minimum Credits
Elective	Speech/Comp. Elective(s)	3
Elective	Elective(s) to reach minimum 60 credits	3
MTH 197	Linear Algebra	4
MTH 293	Calculus III	4
Elective	Soc. Sci. Elective(s) 2	3
Total		17

Fourth Semester

Class	Title	Minimum Credits
MTH 295	Differential Equations	4
Elective	Arts/Human. Elective(s) 1	3
Elective	Arts/Human. Elective(s) 2	3
Elective	Elective(s) to reach a minimum of 60 credits.	4
Total		14

Total Credits Required: 60

Pre-Actuarial Science (PPAS)-also available online

First Semester

Class	Title	Minimum Credits
ACC 111	Principles of Financial Accounting	3
CPS 161	An Introduction to Programming with Java	4
ENG 111	Composition I	4
MTH 191	Calculus I	5
Total		16

Second Semester

Class	Title	Minimum Credits
ACC 122	Principles of Managerial Accounting	3
ECO 211	Principles of Economics I	3
Elective	Nat. Sci. Elective(s)	3
MTH 192	Calculus II	4
Elective	Arts/Human. Elective(s) 1	3
Total		16

Third Semester

Class	Title	Minimum Credits
ECO 222	Principles of Economics II	3
MTH 197	Linear Algebra	4
Elective	Nat. Sci. Lab Elective(s)	3
Elective	Soc. Sci. Elective(s) 2+	3
Total		13

Fourth Semester

Class	Title	Minimum Credits
MTH 293	Calculus III	4
Elective	Arts/Human. Elective(s) 2++	3
Elective	Speech/Comp. Elective(s)	3
Elective	Elective(s) to reach minimum 60 credits	5
Total		15

Total Credits Required: 60

Pre-Pharmacy (PPHA)

First Semester

Class	Title	Minimum Credits
Elective	Biology Restricted Elective	4
CEM 111	General Chemistry I	4
MTH 191	Calculus I	5
Elective	Arts/Human. Elective(s)	3
Total		16

Second Semester

Class	Title	Minimum Credits
Elective	Restricted Biology Elective	4
CEM 122	General Chemistry II	4
ENG 111	Composition I	4
Elective	Elective(s) to reach minimum 60 credits	3
Total		15

Third Semester

Class	Title	Minimum Credits
CEM 211	Organic Chemistry I	4
Elective	Speech/Comp. Elective(s)	3
PHY 111	General Physics I	4
Elective	Arts/Human. Elective(s) 2	3
Elective	Soc. Sci. Elective(s) 1	3
Total		17

Fourth Semester

Class	Title	Minimum Credits
CEM 222	Organic Chemistry II	4
PHY 122	General Physics II	4
Elective	Elective(s) to reach minimum 60 credits	1
Elective	Soc. Sci. Elective(s) 2	3
Total		12

Total Credits Required: 60

Footnotes

*Students transferring to EMU as a biology major may substitute MTH 176 or any higher 4-credit hour math course for MTH 191.
**Students transferring to EMU as a biology major may substitute MTH 160 or higher for MTH 192.
***Students transferring to EMU as a biology major may consider completing BIO 208 at WCC prior to transfer.
+See the MTA list to make course selections from any discipline except ECO.
++Transfer students should consider a course from the the EMU Diverse Word Requirements list.

Accurate as of 04/19/2024 Information is subject to change without notice.