

2022-23 ACADEMIC PROGRAMS

2022-2023 MATH AND SCIENCE (ASMSAS)

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.

60

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 MTH 191 | College Algebra 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 MTH 192 | Basic Statistics** 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 Accounting I | 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 Accounting II | 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 02/22/2023 Information is subject to change without notice.