

MATHEMATICS, B.S. (BEHREND)

Begin Campus: Any Penn State Campus

End Campus: Erie

Suggested Academic Plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2023-24 academic year. To access previous years' suggested academic plans, please visit the archive (<https://bulletins.psu.edu/undergraduate/archive/>) to view the appropriate Undergraduate Bulletin edition (*Note: the archive only contains suggested academic plans beginning with the 2018-19 edition of the Undergraduate Bulletin*).

Applied Mathematics Option: Mathematics, B.S. at Erie Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits Spring	Credits
MATH 140 ^{**†}	4 MATH 141 ^{*#}	4
ENGL 15 or 30H [‡]	3 MATH 220 [*]	2
CMPSC 121 ^{**†}	3 CMPSC 122 [*]	3
General Education Course (GN Selection/Science Sequence Course) [†]	4 General Education Course (GN Selection/Science Sequence Course) [†]	4
PSU 7	1 General Education Course [†]	3
	15	16

Second Year

Fall	Credits Spring	Credits
CAS 100 [‡]	3 MATH 311W [*]	4
MATH 230 [*]	4 MATH 251 [*]	4
STAT 301 ^{*2}	3 STAT 401 [*]	3
General Education Course [†]	3 General Education Course	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
	14.5	15.5

Third Year

Fall	Credits Spring	Credits
MATH 312 [*]	3 ENGL 202C [‡]	3
Additional Course Selection (Group A) [*]	3 Additional Course Selection (Group A) [*]	3
Additional Course Selection (Group C) [*]	3 Additional Course Selection (Group B) [*]	3
General Education Course [†]	3 Additional Course Selection (Group C) [*]	3

Program List Course [*]	3 General Education Course [†]	3
	15	15

Fourth Year

Fall	Credits Spring	Credits
Additional Course Selection (Group A) [*]	3 Additional Course Selection (Group A) [*]	3
Additional Course Selection (Group B) [*]	3 Additional Course Selection (Group A) [*]	3
Elective Course	3 Program List Course ^{**†}	3
General Education Course [†]	3 Elective Course	3
Program List Course [*]	3 General Education Course [†]	3
	15	15

Total Credits 121

- * Course requires a grade of C or better for the major
- ‡ Course requires a grade of C or better for General Education
- # Course is an Entrance to Major requirement
- † Course satisfies General Education and degree requirement

¹ Prerequisite: satisfactory performance on the MATH placement tests (ALEKS) - i.e. placement beyond the level of MATH 22; or CHEM 101 and MATH 22 or MATH 41

² See adviser for acceptable substitutions

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

Program Notes

- 1.) Students who have not met the admissions requirement of two units of a high school world language must complete a college level-one world language within their first 60 credits. In order to be eligible for entrance to the mathematics major, a student must have attained at least a 2.00 cumulative GPA and completed MATH 140 and MATH 141 earning a grade of C or better in both courses.
- 2.) Students graduating from a major must achieve a minimum GPA of 2.00 and earn a grade of C or better in all 300- and 400-level courses within the "prescribed," "additional," and "supporting" courses as specified in Senate Policy 82-44. If a student received a grade below a C, s/he must repeat that course or a School approved alternative, and earn a grade of C or better.
- 3.) Students should inquire whether their Program List courses count toward a minor or a certificate.
- 4.) A student must earn at least a total of 120 credits for graduation.

Scheduling Patterns

Some courses are offered only in the fall or in the spring semester, and some upper-level courses are offered in alternative year pattern. The scheduling pattern below is tentative and subject to change:

Every Fall - MATH 312, MATH 455

Every Spring - MATH 436, STAT 401

Fall (Even Years) - MATH 427, MATH 428, MATH 465, STAT 462

Spring (Odd Years) - MATH 421, MATH 449, STAT 461

Fall (Odd Years) - MATH 412, MATH 435, STAT 414

Spring (Even Years) - MATH 310, MATH 429, MATH 456, MATH 482, one of either STAT 464 or STAT 466

Spring (Occasional Offerings) - MATH 403, MATH 426 or MATH 475Y or MATH 497

Advising Notes

Science Sequence Course

Student must complete one of the following two semester science course sequences, which will also count toward their general education Science (GN) requirement:

- BIOL 110S and BIOL 220W

- CHEM 110, CHEM 111, CHEM 112, and CHEM 113

- PHYS 211 and PHYS 212

- PHYS 250 and PHYS 251

Additional Course Selections

Group A: MATH 310, MATH 412, MATH 449, MATH 455, MATH 456, MATH 482, STAT 414, STAT 461, STAT 464, STAT 462, STAT 466

Group B: MATH 421, MATH 426, MATH 427, MATH 429, MATH 435, MATH 436, MATH 465

Group C: CMPSC 221 or higher, with the exception of CMPSC 360

Program List Courses

- All 300- and 400-level courses in BIOL, CHEM, MATH, PHYS, and STAT.

No more than three credits of any 495 can be used as supporting courses

- CMPSC 102, CMPSC 221, and all 300-and 400-level CMPSC courses, with the exception of CMPSC 360

- ACCTG 211

- All CMPEN Courses

- All EE Courses

- All EMCH Courses

- All 300- and 400-level courses in ECON

- All 300-and 400-level courses in FIN

- All 200- and above level courses in MIS

- All SCM courses, with the exception of SCM 200

- BA 241 and BA 242

- All ME Courses

- All MGMT courses

- All MRKTG courses

- All SWENG Courses

Business Option: Mathematics, B.S. at Erie Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year		
Fall	Credits Spring	Credits
MATH 140 ^{*#†}	4 MATH 141 ^{*#}	4
ENGL 15 [‡]	3 MATH 220 [*]	2
CMPS 121 ^{**†}	3 CMPS 122 [*]	3
PSU 7	1 ECON 102 [†]	3
General Education Course (GN Selection/Science Sequence Course) [†]	4 General Education Course (GN Selection/Science Sequence Course) [†]	4
	15	16
Second Year		
Fall	Credits Spring	Credits
CAS 100 [‡]	3 MATH 311W [*]	4
MATH 230 [*]	4 MATH 251 [*]	4
STAT 301 ^{*2}	3 STAT 401 [*]	3
ECON 104 [†]	3 MIS 204 [*]	3
General Education Course (GHW)	1.5 General Education Course (GHW)	3
	14.5	17
Third Year		
Fall	Credits Spring	Credits
MATH 312 [*]	3 ENGL 202C ^{‡†}	3
ACCTG 211 [*]	4 Additional Course Selection (Group A) [*]	3
Additional Course Selection (Group A) [*]	3 Additional Course Selection (Group D) [*]	3
General Education Course [†]	3 Additional Course Selection (Group B) [*]	3
General Education Course	3 General Education Course	3
	16	15
Fourth Year		
Fall	Credits Spring	Credits
Additional Course Selection (Group B) [*]	3 Additional Course Selection (Group C) [*]	3
Additional Course Selection (Group C) [*]	3 Program List Course [*]	3
Additional Course Selection (Group D) [*]	3 General Education Course	3
Program List Course [*]	3 Elective Course	3
General Education Course	3 Elective Course	3
	15	15

Total Credits 123.5

* Course requires a grade of C or better for the major
 ‡ Course requires a grade of C or better for General Education
 # Course is an Entrance to Major requirement

† Course satisfies General Education and degree requirement

¹ Prerequisite: satisfactory performance on the MATH placement tests (ALEKS) - i.e. placement beyond the level of MATH 22; or CHEM 101 and MATH 22 or MATH 41
² See adviser for acceptable substitutions

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

Program Notes

- 1.) Students who have not met the admissions requirement of two units of a high school world language must complete a college level-one world language within their first 60 credits. In order to be eligible for entrance to the mathematics major, a student must have attained at least a 2.00 cumulative GPA and completed MATH 140 and MATH 141 earning a grade of C or better in both courses.
- 2.) Students graduating from a major must achieve a minimum GPA of 2.00 and earn a grade of C or better in all 300- and 400-level courses within the "prescribed," "additional," and "supporting" courses as specified in Senate Policy 82-44. If a student received a grade below a C, s/he must repeat that course or a School approved alternative, and earn a grade of C or better.
- 3.) Students should inquire whether their Program List courses count toward a minor or a certificate.
- 4.) A student must earn at least a total of 120 credits for graduation.

Scheduling Patterns

Some course are offered only in the fall or in the spring semester, and some upper-level courses are offered in alternative year pattern. The scheduling pattern below is tentative and subject to change:

- Every Fall** - MATH 312, MATH 455
- Every Spring** - MATH 436, STAT 401
- Fall (Even Years)** - MATH 427, MATH 428, MATH 465, STAT 462
- Spring (Odd Years)** - MATH 421, MATH 449, STAT 461
- Fall (Odd Years)** - MATH 412, MATH 435, STAT 414
- Spring (Even Years)** - MATH 310, MATH 429, MATH 456, MATH 482, one of either STAT 464 or STAT 466
- Spring (Occasional Offerings)** - MATH 403, MATH 426 or MATH 475Y or MATH 497

Advising Notes

Science Sequence Course

Student must complete one of the following two semester science course sequences, which will also count toward their general education Science (GN) requirement:

- BIOL 110S and BIOL 220W
- CHEM 110, CHEM 111, CHEM 112, and CHEM 113
- PHYS 211 and PHYS 212

- PHYS 250 and PHYS 251

Additional Course Selections

Group A: ECON 481, ECON 485, FIN 301, FIN 405, FIN 420, FIN 427, MGMT 301, MGMT 331, MGMT 341, MKTG 301

Group B: MATH 482, MIS 336, MIS 430, MIS 435, MIS 445, STAT 414, STAT 461, STAT 462, STAT 464, STAT 466

Group C: MATH 421, MATH 426, MATH 427, MATH 429, MATH 435, MATH 436, MATH 465

Group D: MIS 336, CMPSC 221 or higher, with the exception of CMPSC 360

No course may be used to fulfill the requirement in two different groups. For example, a student may not use MIS 336 to satisfy both the Group B and Group D requirements.

Program List Courses

- All 300- and 400-level courses in BIOL, CHEM, MATH, PHYS, and STAT.

No more than three credits of any 495 can be used as supporting courses

- CMPSC 102, CMPSC 221, and all 300-and 400-level CMPSC courses, with the exception of CMPSC 360

- All 300- and 400-level courses in ECON

- All 300-and 400-level courses in FIN

- All 200- and above level courses in MIS

- All SCM courses, with the exception of SCM 200

- BA 241 and BA 242

- All MGMT courses

- All MRKTG courses

Computer Science Option: Mathematics, B.S. at Erie Campus

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First Year		
Fall	Credits Spring	Credits
MATH 140 ^{*#†}	4 MATH 141 ^{*#}	4
ENGL 15 or 30H [†]	3 MATH 220 [*]	2
CMPS 121 ^{*†}	3 CMPS 122 [*]	3
General Education Course (GN Selection/Science Sequence Course) [†]	4 General Education Course (GN Selection/Science Sequence Course) [†]	4
PSU 7	1 General Education Course [†]	3
	15	16
Second Year		
Fall	Credits Spring	Credits
CAS 100 [†]	3 MATH 311W [*]	4
MATH 230 [*]	4 MATH 251 [*]	4
STAT 301 ^{*2}	3 STAT 401 [*]	3
General Education Course [†]	3 Additional Course Selection (Group A) [*]	3
General Education Course (GHW)	1.5 General Education Course (GHW)	1.5
	14.5	15.5
Third Year		
Fall	Credits Spring	Credits
MATH 312 [*]	3 ENGL 202C [†]	3
Additional Course Selection (Group A) [*]	3 Additional Course Selection (Group A) [*]	3
Additional Course Selection (Group A) [*]	3 Additional Course Selection (Group B) [*]	3
General Education Course [†]	3 Program List Course [*]	3
Program List Course [*]	3 General Education Course [†]	3
	15	15
Fourth Year		
Fall	Credits Spring	Credits
Additional Course Selection (Group B) [*]	3 Additional Course Selection (Group B) [*]	3
Additional Course Selection (Group B) [*]	3 Program List Course ^{*†}	3
Elective Course	3 Elective Course	3
General Education Course [†]	3 General Education Course [†]	3
Program List Course [*]	3 General Education Course [†]	3
	15	15
Total Credits 121		

* Course requires a grade of C or better for the major
 ‡ Course requires a grade of C or better for General Education
 # Course is an Entrance to Major requirement

† Course satisfies General Education and degree requirement

¹ Prerequisite: satisfactory performance on the MATH placement tests (ALEKS) - i.e. placement beyond the level of MATH 22; or CHEM 101 and MATH 22 or MATH 41
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Advising Notes

Science Sequence Course

Student must complete one of the following two semester science course sequences, which will also count toward their general education Science (GN) requirement:

- BIOL 110S and BIOL 220W
- CHEM 110, CHEM 111, CHEM 112, and CHEM 113
- PHYS 211 and PHYS 212

- PHYS 250 and PHYS 251

Additional Course Selections

Group A: CMPSC 311 or SWENG 311, CMPSC 312 or CMPEN 351, CMPSC 455, CMPSC 465

Group B: CMPSC courses at the 300- and 400-level, with the exception of CMPSC 360

Program List Courses

- All 300- and 400-level courses in MATH and STAT. No more than three credits of any 495 can be used as supporting courses

- CMPSC 102, CMPSC 221, and all 300- and 400-level CMPSC courses, with the exception of CMPSC 360

- CMPEN 441

- All 200- and above level courses in MIS

- All SCM courses, with the exception of SCM 200

Pure Mathematics Option: Mathematics, B.S. at Erie Campus

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Additional Course Selection (Group B) [*]	3 Additional Course Selection (Group B) [*]	3
General Education Course [†]	3 Additional Course Selection (Group A) [*]	3
Program List Course [*]	3 General Education Course [†]	3
	15	15
Fourth Year		
Fall	Credits Spring	Credits
Additional Course Selection (Group A) [*]	3 Additional Course Selection (Group A) [*]	3
Additional Course Selection (Group B) [*]	3 Additional Course Selection (Group A) [*]	3
Elective Course	3 Program List Course ^{**†}	3
General Education Course [†]	3 Elective Course	3
Program List Course [*]	3 General Education Course [†]	3
	15	15
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 # Course is an Entrance to Major requirement

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Advising Notes

Science Sequence Course

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-PHYS 250 and PHYS 251

Additional Course Selections

Group A: MATH 310, MATH 412, MATH 449, MATH 455, MATH 456, MATH 482, STAT 414, STAT 461, STAT 464, STAT 462, STAT 466

Group B: MATH 421, MATH 426, MATH 427, MATH 429, MATH 435, MATH 436, MATH 465

No course may be used to fulfill the requirement in both Group A and Group B

Program List Courses

- All 300- and 400-level courses in BIOL, CHEM, MATH, PHYS, and STAT.
No more than three credits of any 495 can be used as supporting courses

- All CMPEN Courses

- CMPSC 102, CMPSC 221, and all 300-and 400-level CMPSC courses, with the exception of CMPSC 360

- All 300- and 400-level courses in ECON

- All EE Courses

- All EMCH Courses

- All 300-and 400-level courses in FIN

- All 200- and above level courses in MIS

- All SCM courses, with the exception of SCM 200

- ACCTG 211

- BA 241 and BA 242

- All ME Courses

- All MGMT courses

- All MRKTG courses

- PHIL 10, PHIL 12

- All SWENG Courses