

SAMPLE PROGRAM OF STUDY – MATHEMATICS: APPLIED DISCRETE OPTION

There is considerable flexibility in designing a program of study. The example given below is not likely to fit every situation and is provided for information as you develop your own plan with your academic advisor. All course requirements for the B.S. Mathematics Applied Discrete Option are included in this sample plan. See the 2024-2025 Academic Catalog for details.

| Fall Semester Year 1 | | Credits |
|----------------------|---|-----------|
| MATH 1225 | Calculus of a Single Variable (Pathway 5f) | 4 |
| MATH 1004 | Discovering Mathematics I (fall only)* | 1 |
| CS 1114 | Intro to Software Design (coreq: MATH 1225) | 3 |
| ENGL 1105 | First-Year Writing (Pathway 1f) | 3 |
| | Pathway 2 | 3 |
| | Pathway 3 | 3 |
| | | 17 |

| Spring Semester Year 1 | | Credits |
|------------------------|---|-----------|
| MATH 1226 | Calculus of a Single Variable (Pathway 5f) | 4 |
| MATH 1044 | Discovering Mathematics II (spring only)* | 2 |
| CS 2114 | Software Des & Data Structures (Pathway 6d) | 3 |
| ENGL 1106 | First-Year Writing (Pathway 1f) | 3 |
| | Pathway 7 ¹ | 3 |
| | | 15 |

| Fall Semester Year 2 | | Credits |
|----------------------|--|-----------|
| MATH 2114 | Intro to Linear Algebra | 3 |
| MATH 2204 | Intro to Multivariable Calculus | 3 |
| CS 2505 | Computer Organization | 3 |
| | Pathway 3 | 3 |
| | Pathway 4 (BIOL, CHEM, GEOS, ISC, NEUR PHYS, or PSYC) | 3 |
| | | 15 |

| Spring Semester Year 2 | | Credits |
|------------------------|--|-----------|
| MATH 2214 | Intro to Differential Equations (Pathway 5a) | 3 |
| MATH 3034 | Intro to Proofs (prereq: C in MATH 2114) | 3 |
| CS 3114 | Data Structures and Algorithms | 3 |
| | Pathway 2 | 3 |
| | Pathway 4 (BIOL, CHEM, GEOS, ISC, NEUR PHYS, or PSYC) | 3 |
| | | 15 |

| Fall Semester Year 3 | | Credits |
|----------------------|---|-----------|
| MATH 3124 | Modern Algebra | 3 |
| MATH 3214 | Calculus of Several Variables | 3 |
| MATH 3134 | Applied Combinatorics & Graph Theory | 3 |
| STAT 4XXX | STAT 4705, STAT 4714, or STAT 4105 ² | 3 |
| | Free Elective | 3 |
| | | 15 |

| Spring Semester Year 3 | | Credits |
|------------------------|------------------------------|-----------|
| MATH 3144 | Linear Algebra I | 3 |
| MATH 3224 | Advanced Calculus | 3 |
| CS 41XX | CS 4104, CS 4114, or CS 4124 | 3 |
| | Free Elective | 3 |
| | Free Elective | 3 |
| | | 15 |

| Fall Semester Year 4 | | Credits |
|----------------------|---|-----------|
| MATH 4XXX | 4000-Level Applied Discrete Math ³ | 3 |
| MATH 4XXX | 4000-Level Math Elective ⁴ | 3 |
| | Pathway 1a | 3 |
| | Free Elective | 3 |
| | Free Elective | 3 |
| | | 15 |

| Spring Semester Year 4 | | Credits |
|------------------------|---|-----------|
| MATH 4XXX | 4000-Level Applied Discrete Math ³ | 3 |
| MATH 4XXX | 4000-Level Math Elective ⁴ | 3 |
| | Pathway 6a | 3 |
| | Free Elective | 3 |
| | Free Elective | 1 |
| | | 13 |

¹ The course selected in Pathway 7 may double-count with one other Pathway Concept if the selected course is also in another Pathway Concept.

² Consult prerequisites for STAT courses.

³ Select two of: {4124 (fall only), 4134 (spring only), 4144 (spring only), 4175, 4176, 5114 (spring only), 5454 (fall only), 5464 (spring only)}

⁴ Any of the 4000-level Applied Discrete Math course options that were not selected among the six credits of 4000-Level Applied Discrete Math can be used. At most one of {4044, 4334} is allowed. At most one {4425, 4564} is allowed. The following CANNOT be used: {4574, 4625, 4626, 4644, 4664}. Math Undergraduate Policy & Curriculum Committee approval required to use any of {4974, 4984, 4994}.

* MATH 1004 and MATH 1044 are strongly recommended free electives for first-year math majors.

Minimum Graduation Requirements:

Credit Hours: 120

Overall GPA: 2.0

In-Major GPA: 2.0