

College of Science
 Bachelor of Science: Mathematics Major
 Applied and Discrete Mathematics Option
 For students graduating in calendar year 2008

I. University Core Curriculum (30-36 credits): All courses used for the core must be on the approved University Core Curriculum list. Each of Area 2 and Area 3 requires 6 hours. Area 4 requires a single eight-hour laboratory sequence in Biology, Chemistry, Geology, or Physics, but the two-hour lab portion of this requirement is currently waived by the Provost. Mathematics majors must take Math 1205-1206 or its equivalent to satisfy the Area 5 core requirement.

Writing and Discourse (Area 1: 6 credits) _____ 3 ()
 _____ 3 ()

Ideas, Cultural Traditions, and Values (Area 2: 6 credits) _____ 3 ()
 _____ 3 ()

Society and Human Behavior (Area 3: 6 credits) _____ 3 ()
 _____ 3 ()

Scientific Reasoning and Discovery (Area 4: 6 credits) _____ 3 ()
 _____ 3 ()

Quantitative and Symbolic Reasoning (Area 5: met by major)

Creativity and Aesthetic Experience (Area 6: 3 credits) _____ 3 ()

Critical Issues in a Global Context (Area 7: 3 credits) _____ 3 ()

For students entering prior to Fall 2005 (Writing Intensive courses: 6 credits) MATH 3034 3 ()
 _____ 3 ()

For students entering Fall 2005 or later, the ViEWS Requirement is met by required courses in the major.

Foreign Languages: The equivalent of three years of one foreign language in secondary school.* _____ 3 ()
 _____ 3 ()

II. Required Mathematics Courses (46 credits.)

A. Calculus and Vector Geometry

MATH 1205 3 ()
 MATH 1206 3 ()
 MATH 1224 2 ()
 MATH 2224 3 ()

B. Linear Algebra, ODE's:

MATH 1114 2 ()
 MATH 2214 3 ()

C. Intro Proofs/Algebra:

MATH 3034 (WI) 3 ()
 MATH 3124 3 ()
 MATH 3134 3 ()

D. Advanced Calculus:

MATH 3214 3 ()
 MATH 3224 3 ()

MATH 3144 3 ()

The following substitutions are allowed: MATH 4124 for MATH 3124, (MATH 4225-4226¹) for (MATH 3214 and MATH 3224).

E. 12 credit hours of 4000-Level Mathematics Courses¹, including MATH 4134 and MATH 4164. (Subject to the following restrictions: i) MATH 4525, 4526, 4544, 4554, 4564, 4574, and 4584 may not be taken for credit by Mathematics majors; ii) At most one of MATH 4044, 4334, and 4344 is allowed.)

MATH 4134 3 () MATH 4164 3 () _____ 3 () _____ 3 ()

III. Required Computer Science and Statistics Courses²:(23 or 21 credits, depending on whether CS 1044 (3 credits) or CS 1344 (1 credit) is taken.)

| | |
|---|---------|
| CS 1044/1344 (Intro Programming in C/Programming in C) | 3/1 () |
| CS 1705 (Introduction to Object-Oriented Development) | 3 () |
| CS 1706 (Introduction to Object-Oriented Development) | 3 () |
| CS 2204 (UNIX) | 2 () |
| CS 2704 ³ or CS 2605 ³ (Data Structures & OO Development) [6] | 3 () |
| CS 2604 ³ or CS 2606 ³ (Data Structures & OO Development) [6] | 3 () |
| CS 4104 (Data and Algorithm Analysis) | 3 () |
| STAT 4714 (Probability and Statistics for EE's) | 3 () |
| _____ () _____ () _____ () | |

IV. Electives (16/18) credits, depending on whether CS 1044 (3 credits) or 1344 (1 credit) is taken):

| | | |
|--------------|--------------|--------------|
| _____ ()() | _____ ()() | _____ ()() |
| _____ ()() | _____ ()() | _____ ()() |
| _____ ()() | _____ ()() | _____ ()() |
| _____ ()() | _____ ()() | _____ ()() |

V. Outcomes Assessment:

Each student is required to participate in the department's Outcomes Assessment procedures as determined by each year's Undergraduate Program Committee and approved by the Head.

VI. Satisfactory progress toward the B.S. in Mathematics:

Upon having attempted 36 semester credits, the student must have completed 12 credits of the University Core. Upon have attempted 72 credits, the student must have completed 24 credits of the University Core.

Satisfactory progress toward the B.S. in mathematics requires that:

1. Within the previous two semesters, the student must pass at least one mathematics course which is used in the in-major GPA calculation.
2. Upon having attempted 72 semester credits (including transfer, advanced placement, advanced standing, credit by examination, freshman rule), students must have completed:

| | |
|---|-------------|
| MATH 1205-1206, 1224, 2224: Calculus | 11 |
| MATH 1114, 2214: Linear Algebra and ODE's | 5 |
| MATH 3034: Proofs and Algebraic Systems | 3 |
| Total Credits | (19) |

3. Upon having attempted 96 semester credits, students must have an in-major grade-point average of 2.0 or above.

VII. Minimum Hours Required. 120 semester credits.

VIII. Minimum GPA Required. For graduation, students are required to have a 2.0 GPA and a 2.0 in-major GPA. All Mathematics courses count toward the in-major GPA for this option except Math 1015, 1016, 2015, 2016, and any undergraduate Mathematics course with second digit a 5 or a 6.

*Students who completed two years of a single foreign language in high school are strongly urged to complete the second semester (1106) of that foreign language very early in their program of study. Students who will be taking first and second semesters (1105-1106) of a foreign language are encouraged to schedule it in their freshman or sophomore years. NOTE: Students who completed fewer than two years of a single foreign language in high school must complete six semester hours of one foreign language at the college level and these six credits do not count toward the 120 hours required to graduate in the College of Science.

¹Note the following prerequisites and corequisites for Mathematics courses:

| course | Prerequisites/corequisites beyond courses in II A-D. |
|-----------|--|
| MATH 4176 | MATH 4175 |
| MATH 4214 | MATH 4425 or 4564 |
| MATH 4226 | MATH 4225 |
| MATH 4246 | MATH 4245 |
| MATH 4404 | MATH 4564, ESM 2074 |
| MATH 4426 | MATH 4425 |

²Note the following prerequisites and corequisites for Computer Science courses:

| course | Prerequisites/corequisites |
|---------|--|
| CS 1344 | 1 year high-school course in programming in either C or Pascal |
| CS 1705 | ENGE 1024 or programming experience in C++ or Java, MATH 1205 |
| CS 1706 | CS 1705 |
| CS 2204 | CS 1706 |
| CS 2605 | CS 1706 and MATH 3034 (substituting for MATH 2534) |
| CS 2606 | CS 2605 |
| CS 2704 | CS 1706 |
| CS 2604 | CS 2204, CS 2704 and MATH 3034 (substituting for MATH 2534) |
| CS 4104 | CS 2604 or 2606, MATH 3134 or MATH 3124 |

Note also that successful completion of the listed CS courses (with a C or better in all but CS 4104) and of CS 1604 (Networking --- 1 credit hour) will fulfill the requirements for a minor in Computer Science.

³Note that CS 2704 is taken before CS 2604.

