I. Curriculum for Liberal Education (30 credits): All courses used for the Curriculum for Liberal Education must be on the approved Curriculum for Liberal Education list. Each of Area 2 and Area 3 requires 6 hours. Area 4 requires a single six-hour laboratory sequence in Biology, Chemistry, Geosciences, or Physics. Mathematics majors must take Math 1205-1206 or its equivalent to satisfy the Area 5 requirement. The Area 6 requirement must be met with one 3-credit course, not three 1-credit courses.

Area 1: Writing and Discourse (6 credits)  
Area 2: Ideas, Cultural Traditions, and Values (6 credits)  
Area 3: Society and Human Behavior (6 credits)  
Area 4: Scientific Reasoning and Discovery (6 credits)  
Area 5: Quantitative and Symbolic Reasoning (met by major)  
Area 6: Creativity and Aesthetic Experience (3 credits)  
Area 7: Critical Issues in a Global Context (3 credits)  
Foreign Languages: The equivalent of three years of one foreign language in secondary school  

II. Required Mathematics Courses (43 credits.)  

A. Calculus and Vector Geometry  
   MATH 1205 Calculus 3 ( )  
   MATH 1206 Calculus 3 ( )  
   MATH 1224 Vector Geometry 2 ( )  
   MATH 2224 Multivariable Calculus 3 ( )  

B. Linear Algebra, ODE's:  
   MATH 1114 Elementary Linear Algebra 2 ( )  
   MATH 2214 Intro. to Differential Equations 3 ( )  

C. Intro Proofs/Algebra:  
   MATH 3034 Intro. to Proofs 3 ( )  
   MATH 3124 Modern Algebra 3 ( )  
   MATH 3144 Linear Algebra I 3 ( )  

D. Advanced Calculus:  
   MATH 3214 Calc. of Several Variables 3 ( )  
   MATH 3224 Advanced Calculus 3 ( )  

The following substitutions are allowed: MATH 4124 for MATH 3124, MATH 4225 for MATH 3224, MATH 4226 for MATH 3214.

* 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.

1 This course (and those so marked below) have a prerequisite or a corequisite that is not one of the courses in II A-D. Please consult the course catalogue for additional prerequisite requirements.
E. 12 credit hours of 4000-level mathematics courses, subject to the following restrictions.

1) A two-course sequence or cluster must be included, selected from the following allowed combinations:
   • any two of the following: 4124, 4134, 4144, 4175, 4176, 5114
   • 4225 together with one of the following: 4226, 4234, or 4214
   • 4245 together with one of the following: 4246, 4254, 4454, or 4425
   • 4425 together with one of the following: 4426, or 4214
   • any two of the following: 4445, 4446, 4414
   • 5454 and 5464.

2) At most one of MATH 4044, 4334, and 4344 is allowed.

3) At most one of 4564 and 4425 is allowed.

4) MATH 4525, 4526, 4544, 4554, 4574, and 4584 may not be taken for credit by Mathematics majors.

5) MATH 4625, 4626, 4644, 4654 and 4664 may not be used for the traditional option.

6) Students must petition the associate head for undergraduate students to obtain permission to use 4974, 4984, or 4994.

A maximum of 60 math hours may be used for the degree.

III. Mathematics-Related Courses

A. Computer Programming: All students must take one of MATH 3054, CS 1044, CS 1054, or CS 1114.

   ____ 3 ( )

B. 12 credits, with either eight credits in one area or six credits in each of two areas selected from the following courses.

   Aerospace and Ocean Engineering: All courses.

   Biological Sciences: BIOL 2004, 2104, 2304, 2604, 2804, 3124, 3404, 3774, 4004, 4134, 4164 (CEE 4164, CSES 4164, ENSC 4164)

   Biological and Systems Engineering: BSE 3305, 3306, 3414 (CEE 4144), 3504, 3514, 4144, 4424 (ME 4434), 4604

   Chemical Engineering: All courses.

   Chemistry: CHEM 3615, 3616

   Civil and Environmental Engineering: CEE 3104, 3304, 3314, 3404, 3414 (BSE 3414), 3424, 3514, 3604, 4104, 4144, 4164 (BIOL 4164), 4304, 4314, 4324, 4354, 4444 (AOE 4054, ESM 4444), 4504, 4534, 4544, 4594 (CSES 4594), 4674

   Computer Science: All courses except CS 1004, 3604, and 4004.

   Crop and Soil Environmental Sciences: CSES 3634 (ENSC 3634), 4594 (CEE 4594), 4644

   Economics: ECON 3104, 3204, 4304, 4404, 4424

   Electrical and Computer Engineering: All courses.

   Engineering Science and Mechanics: All courses except ESM 1054 and 2014.

   Finance, Insurance, and Business Law: FIN 4164

   Geosciences: GEOS 3104, 4124, 4154, 4164, 4174, 4804

   Industrial and Systems Engineering: ISE 2404, 3014, 3214, 3414, 3424, 3614, 4005-4006, 4015, 4016, 4204, 4234, 4404, 4414

   Mechanical Engineering: All courses except ME 4005-4006, 4015, 4134, 4454, 4734, 4744, and 4754.
Philosophy: PHIL 3505-3506, 4514

Physics: PHYS 2305-2306', and all 3000 and up.

Statistics: STAT 3005-3006', 3104, 4004', 4105-4106', 4204', 4214', 4604, 4705-4706', 4714

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IV. Free Electives (sufficient to achieve the 120 credit graduation requirement):

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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 Curriculum for Liberal Education. Upon having attempted 72 credits, the student must have completed 24 credits of the University Curriculum for Liberal Education. In addition, 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, course withdrawal), students must have completed Math 1205, 1206, 1224, 2224, 1114, 2214, and 3034 (totaling 19 credits).
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, 1015, 2015, 2016, and any undergraduate Mathematics course with second digit a 5 or a 6.