College of Science  
Bachelor of Science: Mathematics Major  
Traditional Option  
For students graduating in calendar year 2012

I. Curriculum for Liberal Education (30 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. The Area 6 requirement must be met with one 3-credit course, not three 1-credit courses.

Area 1: Writing and Discourse (6 credits)  
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Area 2: Ideas, Cultural Traditions, and Values (6 credits)  
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Area 3: Society and Human Behavior (6 credits)  
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Area 4: Scientific Reasoning and Discovery (6 credits)  
___________ 3 ( )  
___________ 3 ( )

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

Area 6: Creativity and Aesthetic Experience (3 credits)  
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Area 7: Critical Issues in a Global Context (3 credits)  
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Foreign Languages: The equivalent of three years of one foreign language in secondary school∗

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II. Required Mathematics Courses (43 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  3 ( )  
MATH 3124  3 ( )  
MATH 3144  3 ( )

D. Advanced Calculus:  
MATH 3214  3 ( )  
MATH 3224  3 ( )

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

∗ 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.
E. 12 credit hours of 4000-Level Mathematics Courses (Subject to the following restrictions: i) MATH 4525, 4526\¹, 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; iii) A two-course sequence or cluster must be included from one of the following (each of these courses has three credits): [4175-4176\¹], [4225-4226\¹], [4245-4246\¹], [4425-4426\¹], [4445,4446], [4124, 4134], [4124, 4164\¹], [4134, 4164\¹], [4214, 4225], [4214, 4425], [4225, 4234], [4245, 4254], [4245, 4454], [4245, 4425], [4414, 4445], [4414, 4446], [5454, 5464].) A maximum of 60 math hours may be used for the degree.

III. Mathematics-Related Courses (16 credits, with either eight credits in one area or six credits in each of two areas). Approved courses are as follows:

Aerospace and Ocean Engineering: All courses.

Biological Sciences: BIOL 2004\¹, 2104\¹, 2304\¹, 2604\¹, 2804\¹, 3124\¹, 3404\¹, 3774\¹, 4004\¹, 4134\¹, 4164\¹ (CEE 4164\¹, CSES 4164\¹, ENSC 4164\¹)

Biological and Systems Engineering: BSE 3305\¹, 3306\¹, 3414\¹ (CEE 3414\¹), 3504\¹, 3514\¹, 4144\¹, 4424\¹ (ME 4434\¹), 4604\¹

Chemical Engineering: All courses.

Civil and Environmental Engineering: CEE 3104\¹, 3304\¹, 3314\¹, 3404\¹, 3414\¹ (BSE 3414\¹), 3424\¹, 3514\¹, 3604, 4104\¹, 4144\¹, 4164\¹ (BIOL 4164\¹), 4184\¹, 4204\¹, 4254\¹, 4274\¹ (AE 4274\¹), 4284\¹, 4504\¹, 4534\¹, 4544\¹, 4594\¹ (CSES 4594\¹), 4674\¹

Computer Science: All courses except CS 1004, 3604\¹, and 4004\¹.

Crop and Soil Environmental Sciences: CSES 3634\¹ (ENSC 3634\¹), 4114\¹ (ENSC 4114\¹), 4594\¹ (CEE 4594\¹), 4644

Economics: ECON 3104\¹, 3204\¹, 3224\¹, 4424\¹

Electrical and Computer Engineering: All courses.

Engineering Science and Mechanics: All courses except ESM 1054 and 1114.

Finance, Insurance, and Business Law: FIN 4164\¹

Geosciences: GEOS 3104, 4124\¹, 4154\¹, 4164\¹, 4174\¹, 4804\¹

Industrial and Systems Engineering: ISE 2404, 3014\¹, 3214\¹, 3414\¹, 3424\¹, 3614\¹, 4005\¹-4006\¹, 4015, 4016, 4204\¹, 4234\¹, 4404\¹, 4414\¹

Mechanical Engineering: All courses except ME 4005\¹-4006\¹, 4015\¹, 4134\¹, 4734\¹, 4744, and 4754\¹.

Philosophy: PHIL 3505-3506\¹, 4514\¹

Physics: PHYS 2305\¹-2306\¹, and all 3000 and up.

Statistics: STAT 3005-3006\¹, 3104, 4004\¹, 4105-4106\¹, 4204\¹, 4214\¹, 4604, 4705-4706\¹, 4714

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**All students must take at least one of the following: CS 1044, CS 1054, or CS 1705
IV. Electives (25-31 credits):

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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 Core. Upon have attempted 72 credits, the student must have completed 24 credits of the University Core. 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, freshman rule), 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, 2015, 2016, and any undergraduate Mathematics course with second digit a 5 or a 6.