

# Mathematics, B.A./B.S., Applied Mathematics Concentration

Department of Mathematics & Computer Sciences, 303-556-3208, Science Building 1022

College of Letters, Arts, and Sciences

Catalog 15-16

This sheet applies to the 2015-16 catalog *only*. It does not replace the full catalog or departmental advising sheets as official statements of requirements. Students with declared majors *must* work with a faculty advisor on course selection and sequencing to ensure a timely graduation.

General Studies	30
Major courses	42
Minor (determines BA or BS - see MTH advisor)	18
Electives	30
<b>Total to graduate (min. 40 hrs. upper division)</b>	<b>120</b>

Students who have reached junior standing (60 hrs.) should request a CAPP (graduation compliance report) and review it with a faculty advisor.

## \*TO BE COMPLETED WITHIN FIRST 30 COLLEGE-LEVEL CREDIT HOURS

### Written Communication

- \_\_\_ ENG 1010 (3 hrs.) Composing Arguments\*  
or ENG 1008/1009 (6 hrs.) Intro to Composition, Parts 1 & 2\*  
\_\_\_ ENG 1020 (3 hrs.) Freshman Comp: Analysis, Research, & Documt.  
(ENG 1020 must be completed within 45 credit hours)

### Oral Communication\*

- \_\_\_ (3 hrs.)

### Arts and Humanities

- \_\_\_ (3 hrs.)  
\_\_\_ (3 hrs.)

### Historical

- \_\_\_ (3 hrs.)

### Natural and Physical Sciences

- \_\_\_ (3 hrs.)  
\_\_\_ (3 hrs.)

### Social and Behavioral Sciences I

- \_\_\_ (3 hrs.)

### Social and Behavioral Sciences II

- \_\_\_ (3 hrs.)

### Global Diversity

- \_\_\_ (3 hrs.) may be satisfied within General Studies

### Multicultural Requirement

- \_\_\_ (may be satisfied within General Studies, major, minor, or elective)

## MAJOR CORE COURSES Please see a Math Advisor in M&CS Dept.

All majors in mathematics are required to complete the following basic core of courses (with a required minimum grade of "C" in each of these courses).

- \_\_\_ MTH 1410 (4 hrs.) Calculus I  
\_\_\_ MTH 2410 (4 hrs.) Calculus II  
\_\_\_ MTH 2420 (4 hrs.) Calculus III  
\_\_\_ MTH 3100 (3 hrs.) Introduction to Mathematical Proofs

### Required Applied Mathematics Courses

- \_\_\_ MTH 3140 (4 hrs.) Linear Algebra  
\_\_\_ MTH 3210 (4 hrs.) Probability and Statistics  
\_\_\_ MTH 3420 (4 hrs.) Differential Equations  
\_\_\_ MTH 4480 (4 hrs.) Numerical Analysis I (Senior Experience)

### One of the following three courses:

- \_\_\_ CS 1050 (4 hrs.) Computer Science 1  
OR MTH 2510 (4 hrs.) Computer Programming with Mathematica  
OR CSS 1510 (4 hrs.) Computer Programming: FORTRAN

### One of the following sequences:

- \_\_\_ MTH 3420-Differential Equations **AND** MTH 3440-Partial Diff. Equations  
\_\_\_ MTH 4480-Numerical Analysis I **AND** MTH 4490-Numerical Analysis II  
\_\_\_ MTH 4410-Advanced Calculus I **AND** MTH 4420-Advanced Calculus II  
\_\_\_ MTH 4410-Advanced Calculus I **AND** MTH 4450-Complex Variables

### Additional hours from the following for a total of at least 42 hours:

*Work with your Math advisor in the M&CS department.*

- MTH 3220 - Statistical Methods                      MTH 3250 - Optimization Techniques I  
MTH 3440 - Partial Differential Equations  
MTH 4210 - Probability Theory                      MTH 4410 - Advanced Calculus I  
MTH 4420 - Advanced Calculus II                      MTH 4450 - Complex Variables  
MTH 4490 - Numerical Analysis II

**MINOR** (required) - Your choice of minor determines if you earn a BS or BA so work with your mathematics faculty advisor on this selection.

## ELECTIVES