

**Mathematical Sciences Department  
Social Sciences Building (SSB) 154  
Phone: 786-1744/786-4824**

**Quantitative Skills Tier I General Education  
Requirement (GER) at UAA  
Effective Fall 2006**

The courses that fulfill this requirement emphasize the development of problem-solving skills and evaluation of data. *Before choosing a GER course, students should read the appropriate catalog for the requirements of their intended majors. If you are not sure of your intended major, please consult an academic advisor to make sure you take the most appropriate course.*

**Courses with a prerequisite of Math A105**

**STAT A252 - Elementary Statistics .....3 cr.**

Prerequisite: MATH A105 with a minimum grade of C or placement test.

This course explores the collection and analysis of real-world data and explains the use and misuse of statistics. It is a suitable course for students who do not need to take algebra, trigonometry, or calculus for their majors. Successful completion of this course prepares you to take STAT A308 and statistics or research methods courses which are required by many majors and graduate programs in the social and life sciences.

**MATH A107 - College Algebra .....4 cr.**

Prerequisite: MATH A105 with a minimum grade of C or placement test.

This course features function theory and applications, matrices, logarithms and exponentials, conic sections, and sequences and series, among its many topics. Successful completion of this course prepares you to take MATH A272 (Applied Calculus). Successful completion of Math A107 and MATH A108 prepares you to take MATH A200 (Calculus I).

**MATH A109 - Precalculus .....6 cr.**

Prerequisite: MATH A105 with a minimum grade of B or placement test.

This is an intensive six-credit course designed for students who have taken the subject matter previously, or who wish to progress quickly to Calculus I (Math A200). It contains the content of both Math A107 and Math A108. Note that students may apply no more than seven credits from MATH A107, A108, and A109 towards a baccalaureate degree.

**MATH A172 - Applied Finite Mathematics .....3 cr.**

(Formerly Math A270)

Prerequisite: MATH A105 or placement test.

This course prepares students for the study of applied calculus. It features function theory with interesting applications in the social sciences, economics, and business; matrices, logarithms and exponentials are among its topics. Successful completion of this course prepares you for MATH A272, but not MATH A200.

**Courses with a prerequisite of Math A107**

**STAT A253 – Applied Statistics for the Sciences .....4 cr.**

Prerequisite: MATH A107 or MATH A109

This course satisfies the College of Arts and Sciences Bachelor of Science Statistics requirement. It is a survey course intended for science majors, and includes the use of computer software in the solution of statistical problems.

**MATH A108 - Trigonometry .....3 cr.**

Prerequisite: MATH A107 with a minimum grade of C or placement test.

This course, together with College Algebra (MATH A107), prepares students for Calculus I (Math A200). It features the fundamental trigonometric functions and complex numbers and also provides calculation practice helpful for physics, engineering, and surveying.

**MATH A272 - Applied Calculus .....3 cr.**

Prerequisites: Math A270 or Math A107.

This course satisfies the College of Arts and Sciences Bachelor of Science Mathematics requirement. A solid background in algebra is required. It is an overview of topics from calculus (derivatives and integrals involving rational, exponential and logarithmic functions as well as partial derivatives) along with applications from business and the social sciences.

### Advanced Courses

The following courses require more prerequisites than those in the previous lists. They are recommended as a GER for those who have a strong interest in mathematics and who have previously completed the required prerequisites. They are required for many majors (see UAA catalog).

**Calculus I (MATH A200) .....4 cr.**

Prerequisites: Math A107 with minimum grade of C and Math A108 with minimum grade of C or Math A109 with minimum grade of C.

Calculus I satisfies the College of Arts and Sciences requirement in Mathematics for the Bachelor of Science degree. A solid foundation in algebra and trigonometry is required. It develops the derivative formulas and basic integration techniques for rational, trigonometric, exponential and logarithmic functions as well as examples that use derivatives and integrals.

**Calculus II (MATH A201) .....4 cr.**

Prerequisite: Math A200 with minimum grade of C.

Math A201 prepares students for Calculus III (Math A202) and other advanced studies in Mathematics. It covers integration techniques and applications, sequences and series, and parametric coordinates.

**Probability (STAT A307) .....3 cr.**

Prerequisite: Math A200 with minimum grade of C or Math A272 with minimum grade of C.

This course satisfies the College of Arts and Sciences requirement in Statistics for the Bachelor of Science degree. This course introduces the mathematical theory of probability and its applications.

07/14/06