UA Math Course Information, Fall 2020

Math 106 - Exploring and Understanding Patterns, Functions, and Modeling for Elementary Teachers (3 credits)
ALEKS PPL score of 30-100% , SAT I MSS 530-800, ACT MATH 21-36 required.
Description: This course explores algebraic thinking from early childhood through middle school, with a focus on the different conceptions of algebra, including generalized arithmetic; patterns and functions; and modeling. Students will examine the different topics in K-8 algebra from an advanced perspective. Examinations are proctored.
Comments: Majors within the College of Education can use this course to satisfy their math requirement. This course cannot be used as a prerequisite for any other mathematics courses (except Math 302A for Elementary Education.) If you think you might change your major to one that does not allow Math 106, you should consider Math 107 or 112 instead.

Math 107 - Exploring and Understanding Data (3 credits)
ALEKS PPL score of 30-100% , SAT I MSS 530-800, ACT MATH 21-36 required. Generally a spring course.
Description: This course helps students understand, interpret, and represent data in a useful way to prepare students for courses in statistics. The course will provide students with the knowledge of basic mathematical and software tools and concepts which they can utilize to interpret quantitative information they encounter in their daily life. With the knowledge they gain, students will be able to better understand and assess the validity of quantitative information they receive through the web, newspaper, television, etc. Course topics will include creating various data summaries and descriptive statistics, probability, normal distributions, linear and other regression models, applying techniques to real world data.
Comments: Not a prerequisite to other MATH courses. Prerequisite to SBS 200, ISTA 116, PSY 230. Only for the following majors: Care Health and Society, Communication, Criminal Justice, Family Studies and Human Development, Information Science and Arts, Political Science, Psychology BA, Public Management and Policy, Regional Development, Sociology, or majors that allow Math 105 (except some in Education).

Math 108 - Modeling with Algebraic and Trigonometric Functions (4 credits)
ALEKS PPL score of 40-100% , SAT I MSS 560-800, ACT MATH 24-36 required.
Description: Using algebraic and trigonometric functions to model real-life situations. Course topics include ratios and proportions, functions and graphs, linear and quadratic functions and equations, trigonometric functions and equations, sinusoidal curve-fitting, exponential and logarithmic functions and equations, all with an emphasis on relevant applications.
Comments: This course is designed for Architecture and Speech, Language, & Hearing Sciences majors only. Prerequisite to Math 113 only.

Math 112 - College Algebra and Application (3 credits)
ALEKS PPL score of 40-100% , SAT I MSS 560-800, ACT MATH 24-36 required.
Description: Topics include properties of functions and graphs, linear and quadratic equations, polynomial functions, exponential and logarithmic functions with applications. Students are expected to have a graphing calculator.
Comments: Typically, this course is used to prepare students for additional mathematics courses, but there are students who take this course to satisfy all or part of their requirement. Majors that require Math 105, 106, or 107 will also accept Math 112. Students planning to take Math 122A/B (Calculus I) need to complete both Math 112 and then Math 120R.

Math 113 - Elements of Calculus (3 credits)
ALEKS PPL score of 60-100% , SAT I MSS 640-800, ACT MATH 26-36, or UA Math 112 (grade of C or better) required for placement into this course. Generally available in Spring.
Description: Introductory topics in differential and integral calculus.
Comments: For Pre-pharmacy majors, some majors within the College of Agriculture, and some majors within the College of Social and Behavioral Science. Because this course is considered a survey of calculus, it cannot be used to satisfy the Math 122B/125 requirement and cannot be used as a prerequisite to additional calculus courses such as Math 122A, 122B, 125, or 129. Students who need Calculus I should take Math 120R, then 122A/B instead.

Math 116 – Calculus Concepts for Business Majors (3 credits)
ALEKS PPL score of 60-100% , SAT I MSS 640-800, ACT MATH 26-36, or UA Math 112 (grade of C or better) required. Generally available in Spring as students must also have completed MIS 111 or ABE 120 to be eligible.
Description: Introductory topics in differential and integral calculus: particular emphasis on understanding the principal concepts and their applications to business. Graphing calculators are used for further understanding these concepts.
Comments: This course is for all majors within Eller College and a few in Ag and Life Sciences. Because this course is a survey of calculus for business related majors, it cannot be used to satisfy the Math 122B/125 requirement and cannot be used as a prerequisite to additional calculus courses such as Math 122A, 122B, 125, or 129. Students who need Calculus I should take Math 120R, then 122A/B instead.

Math 119A - Mathematics of Biological Systems: A Calculus Based Approach (4 credits)
ALEKS PPL score of 60-100% , SAT I MSS 640-800, ACT MATH 26-36, or UA Math 112 required.
Description: This course uses real world examples drawn from biology, ecology, and physiology to develop and study models of biological dynamical systems using concepts from calculus.
Comments: This course is for majors within Physiology, Biology, Molecular and Cellular Biology, and Ecology & Evolutionary Biology. Because this course is considered a survey of calculus, it cannot be used to satisfy the Math 122B/125 requirement and cannot be used as a prerequisite to additional calculus courses such as Math 122A, 122B, 125, or 129. Students who need Calculus I should take Math 120R, then 122A/B.

Math 163- Basic Statistics (3 credits)
ALEKS PPL score of 60-100% , SAT I MSS 640-800, ACT MATH 26-36, or UA Math 112 or higher level course required for placement into this course. Recommended as a second semester course.
Description: Organizing data: displaying distributions, measures of center, measures of spread, scatterplots, correlation, regression, and their interpretation. Design of experiments: simple random samples and their sampling distribution, models from probability, normal distributions, and normal approximations. Statistical inference: confidence intervals and hypothesis testing, t procedures and chi-square tests. Not intended for those who plan further studies in statistics.
Comments: Not a prerequisite for any math courses. This course can satisfy the foundation math requirement for majors that allow Math 105 or 112. Students in nursing, nutritional sciences should take this instead of Math 263.

MATH 263- Introduction to Statistics and BioStatistics (3 credits)
ALEKS PPL score of 60-100% , SAT I MSS 640-800, ACT MATH 26-36, or UA Math 112 or higher level course required for placement into this course. Recommended as a second semester course.
Description: Organizing data; distributions, measures of center and spread, scatterplots, nonlinear models and transformations, correlation, regression. Design of experiments: models from probability, discrete and continuous random variables, normal distributions, sampling distributions, the central limit theorem. Statistical inference; confidence intervals and test of significance, t procedures, inference for count data, two-way tables and chi-square procedures, inference for regression, analysis of variance.
Comments: This course is a more thorough treatment of statistics for majors in the College of Science, Physiology, and a few other majors. This course cannot be used as a prerequisite for any math courses. This course can satisfy the foundation math requirement for majors that allow Math 105 or 112.