MATH INFORMATION FOR STUDENTS WHO PLAN ON TAKING UA CALCULUS
placement@math.arizona.edu, math.arizona.edu/placement

MATH AT UA-Most of you will take one of the following courses in the fall: Math 111, 112, 120R, 124, 125, 129. Your course on your schedule tomorrow will be based on your ALEKS Test score. If you plan on taking Math 129 or 223, you will need to add this class to your schedule. Please see a math advisor if you are interested in taking an honors calculus.

ALEKS TEST
- PCAL/PPCL are abbreviations for the Prep for Calculus Test
- CALG/PCLG are abbreviations for the Prep for College Algebra test.
- Please refer to the Math page in your resource guide to see what scores are required for UA math courses.

TESTING
- **FIRST TEST** - If you have not yet completed the UA ALEKS Online Assessment, you need to do so as soon as possible, but outside of the orientation schedule. Review the information on the Math Placement Website at http://math.arizona.edu/placement/mpt and access the test through the Next Steps Center at http://nextsteps.arizona.edu.
- **RETEST** - If you have tested once and would like to retest, you need to set up a proctored testing appointment through the UA Testing Office at 520-621-7589, test@email.arizona.edu. Tests are available around the orientation schedule, and in August before classes begin. There is a $35 fee for each test. It is strongly recommend that one reviews the material before retesting.

OPTIONS FOR STUDENTS WHO DID NOT PLACE INTO UA MATH, REVIEW AND RETEST
- **Review through ALEKS Learning mode.** This is a 6 week access for $30, and will help prepare you for the placement test. See http://math.arizona.edu/academics/placement/mpt/lm.html. You will need to retake the ALEKS placement test through the Testing Office to place into UA Math. Many students take a summer review course like college level Intermediate Algebra. Please note that freshman who want to take UA MATH 111, 112, and 120R must place into these courses through the UA placement test. If you plan on taking a summer course outside Arizona, please have it evaluated through http://math.arizona.edu/placement/credits/request.html before taking it.
- Some students will have the opportunity to take our pilot course in the Fall, Math 100, Prep for University Math. This course is also available in Summer session II this summer.

PREPARING FOR CALCULUS AND PRECALCULUS COURSES
In order to be successful, we recommend reviewing certain skills before classes start. Our courses move quickly. Most professors will begin lecturing on the first day of classes with the expectation that students participate in a significant portion of the discussion. Some courses require quizzes early in the semester. In order to be successful in college level math courses, students should:

1) Start preparing before you arrive at UA. Go to the course website, look at the course syllabus, and get started on the first few weeks of assignments, with the goal that the first few weeks of lecture will be review. This is a formula for success. Do not walk into your first UA math course without review.
2) Students who place into a course with the minimum requirements should consider taking the prerequisite.
3) Review and be prepared. If you are enrolling in math 124/125, review your algebra and trigonometry before classes begin. Here are three websites to help you review:
   - Algebra: http://prep.math.lsa.umich.edu/pmc/
   - Trigonometry: http://math.arizona.edu/~trig/Math111_finalexam_studyguide.doc
   - More review and important links: http://math.arizona.edu/academics/placement/review.html

The Math Department’s calculus webpage at http://math.arizona.edu/~calc/ contains the day-to-day calendars for Math 124, 125, 129, and 223 and suggested homework assignments. After you have reviewed your algebra and trigonometry, try to complete the homework for the first chapter that will be covered in your course.

IMPORTANT: If you are taking math 129 or math 223, http://math.arizona.edu/~courseinfo/common/studyguides.html contains Final Exam Study Guides for these courses. If you are taking math 129, go over the Final Exam Study Guide for math 124/125. If you are taking math 223, then go over the Final Exam Study Guide for math 129. Reviewing these study guide questions should provide you with an idea as to how well prepared you are. Going through this review process is particularly important if you took calculus at another school and you are registering for either math 129 or 223. Each school teaches different topics in calculus, and perhaps uses different terminology and notation. By going over the study guides for the course that precedes the one that you are registered for, you will prepare yourself well. If you find that you have difficulty with the problems in the study guide, then you should rethink where you want to start the calculus sequence.
UA MATH COURSES FOR STUDENTS WHO NEED CALC I OR HIGHER

Math 111 - Plane Trigonometry (2 units) UA ALEKS Prep for Calculus score of 45-100% or Prep for College Algebra score of 55-100% required.

Description: Topics include right triangle trigonometry, trigonometric functions and graphs, trig identities, inverse trig functions, law of sines, and law of cosines. Students are expected to have a graphing calculator.

Comments: Students who complete UA MATH 111 and 112 with a grade of C or higher are then eligible for Math 124.

MATH 112 -- College Algebra Concepts and Applications (3 units) UA ALEKS Prep for Calculus score of 45-100% or Prep for College Algebra score of 55-100% 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: Students who complete UA MATH 111 and 112 with a grade of C or higher are then eligible for Math 124.

Math 120R - Calculus Preparation (4 credits) UA ALEKS Prep for Calculus score of 65-100% required.

Description: Reviews algebra and trigonometry; study of functions including polynomial, rational, exponential, logarithmic and trigonometric. Graphing calculators are required in this course.

Comments: This course is intended to prepare students for Math 124. Although this course is not specifically listed as a mathematics requirement for any major, majors that only require courses such as Math 105 or Math 112 can accept this course. Students who need to take math 124 but do not place into it, should take math 120R or both Math 111 and 112.

Math 124 - Calculus I with Applications (5 credits) UA ALEKS Prep for Calculus score of 75-100% required.

Description: Introduction to calculus with an emphasis on understanding and problem solving. Concepts are presented graphically and numerically as well as algebraically. Elementary and transcendental functions, their properties and uses in modeling; the key concepts of derivative and definite integral; techniques of differentiation, using the derivative to understand the behavior of functions; applications to optimization problems in physics, biology and economics. A graphing calculator is required.

Comments: This course gives students a solid foundation needed to continue on to other courses such as Math 129. All majors within the College of Engineering and almost all majors within the College of Science require this course. Some majors in other colleges may also require this course. Any colleges listing Math 125 as their math requirement will accept Math 124. Students must complete UA Math 120R with a grade of C or higher, or both UA Math 111 and 112 with a grade of C or higher as prerequisites.

Math 125 - Calculus I (3 credits) UA ALEKS Prep for Calculus score of 90-100% required.


Comments: Placement for this course is at a higher level than Math 124 due to its accelerated format. Any major indicating Math 125 as its math requirement will accept Math 124. This course uses the same text and syllabus as Math 124 even though the words "with applications" are not used in its title.

MATH 129 -- Calculus II (3 units) Continuation of MATH 124 or MATH 125. Techniques of symbolic and numerical integration, applications of the definite integral to geometry, physics, economics, and probability; differential equations from a numerical, graphical, and algebraic point of view; modeling using differential equations, approximations by Taylor series.

MATH 223 -- Vector Calculus (4 units) Vectors, differential and integral calculus of several variables.

MATH 250A -- Calculus and Differential Equations I (3 units) Integral calculus with applications, techniques of integration, solving first order differential equations using separation of variables, introduction to autonomous first order differential equations. Designed as a continuation of the AB curriculum. The sequence MATH 250A-250B substitutes for the pair of courses MATH 129-254 or the pair MATH 129-355. There is a special section (section 2) for Biochemistry majors.

MATH 254 -- Introduction to Ordinary Differential Equations (3 units) Solution methods for ordinary differential equations, qualitative techniques; includes matrix methods approach to systems of linear equations and series solutions.

MATH DEPT INFORMATION
placement@math.arizona.edu
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The Math Department website at http://math.arizona.edu/ contains a good amount of information about the department that you will find useful.

If you are a mathematics major, then the website http://math.arizona.edu/ugprogram/ contains useful information that you should familiarize yourself with. In particular, click on “internships and outside programs” to begin planning for the future.