Math Placement

Students planning to major in the social sciences, arts, or humanities, and who wish to take a mathematics course but omit the study of calculus, may choose from MATH 1110 (Elementary Probability Theory), or MATH 1140 (Financial Mathematics). Students may not take all 12 credits needed to satisfy the math/science requirement from the Department of Mathematics and the Department of Statistics. For purposes of the requirement, the courses in these two departments are treated as coming from a single department.

The study of calculus is the foundation of college mathematics for students planning to major in mathematics or the physical sciences, or for those who anticipate a career or graduate study in any of the physical sciences, engineering, or applied social sciences (such as economics). There are essentially three programs of study available in calculus:

MATH 1190 is a one-semester four hour course covering the same material as 1210, but with additional instruction in college algebra. It is intended for students with no previous exposure to Calculus who may need extra help.

MATH 1210, 1220 is a terminal one-year sequence intended for business, biology, and social science majors, and for some students fulfilling their premed requirements.

MATH 1310, 1320, 2310 is the traditional calculus sequence intended for students of mathematics and the natural sciences, as well as for students intending to pursue graduate work in the applied social sciences.

You may NOT take more than one of MATH 1190, MATH 1210, or MATH 1310 for credit. Also, you may NOT take both MATH 1220 and MATH 1320 for credit. The courses have overlapping material.

The MATH 1210-1220 sequence is unacceptable as a prerequisite for mathematics courses numbered 2310 and above. Students anticipating the need for higher mathematics courses should instead select the MATH 1310-1320 sequence. In all cases, MATH 1310 (including AP credit) may be substituted for MATH 1210. However, the reverse is not always true. Unless otherwise specified, MATH 1210 may not be substituted for MATH 1310. Similarly, MATH 1320 can always be substituted for MATH 1220, but the reverse is typically not true. More information regarding calculus placement may be found linked from the Department homepage.

Students who do not have credit for a first-semester calculus course (via exam or transfer work) may elect to take MATH 1210 or MATH 1310. Exceptionally well-prepared students (who place out of both MATH 1310 and 1320) may choose either MATH 2310 or MATH 3250 (Differential Equations) as their first course in the fall.

MATH 2315, 3315 – Advanced Calculus and Linear Algebra I and II
To enroll in these accelerated sections, MATH 2315 and its continuation MATH 3315, the student should contact the instructor. These courses are designed for highly motivated mathematics students. These courses are meant for those students who expect to major in subjects requiring the use of fairly advanced mathematics and for others who just love doing mathematics. It differs from MATH 2310 in that more advanced material will be covered and more work on the part of the student will be expected. We expect that the additional effort will be amply rewarded. The prerequisite is a good command of single variable calculus.

Additional Courses
Pre-Commerce students are required to take a statistics course, usually STAT 2120, and one other mathematics course, usually MATH 1110, 1210, 1220, or 1310.

Pre-med students who are seeking to fulfill the "second-semester" calculus course required by some medical schools typically take MATH 1210-1220.

Elementary Education students planning to enroll in the 5-year Teacher Education program are encouraged to take MATH 1150 (The Shape of Space: Informal Geometry) and MATH 1160 (Algebra, Number Systems, and Number Theory). Enrollment in both MATH 1150 and MATH 1160 is restricted to prospective students of the 5-year elementary education program. The instructor's permission is required for other students and may be obtained via e-mail to the instructor or from the instructor on the first day of class.

To prepare for the mathematics major, you should complete the calculus sequence MATH 1310, 1320, 2310 by the end of your fourth semester; you also must demonstrate computer proficiency by completing CS 1110, CS 1111, CS 1112, CS 1113, CS 1120, OR PHYS 2660, or an approved equivalent course with a grade of C- or higher. Please refer to the School of Engineering's enrollment policy on CS courses, which may be found on their web site. Descriptions of the major and minor programs are available from the Mathematics Department office.

Mathematics Prerequisites for the Sciences and Economics
Students who plan to major in economics or in one of the sciences need to pay careful attention to the requirements of those programs. Below is a list of minimal requirements; additional math courses are often recommended and are sometimes prerequisites for advanced courses and for admission to graduate programs. Since individual departments can change their requirements for their major, please verify their requirements by reading their departmental announcements. Specific questions should be addressed to individual departments.

Program	Math Requirements
Astronomy	MATH 1210-1220 or MATH 1310-1320
Astro-Physics	MATH 1310, 1320, 2310, 3250, 4210, 4220

Program	Math Requirements
Biology	one semester of calculus (MATH 1210 or MATH 1310)
Chemistry B.A.	MATH 1210, 1220 OR 1310, 1320
Chemistry B.S.	MATH 1310, 1320 AND 2310 OR 3250
Cognitive Science	MATH 1210-1220 OR MATH 1310
Economics	MATH 1210 and 1220 OR MATH 1310 and 1320
Environmental Sciences	MATH 1210 OR 1310
Physics B.A.	MATH 1310, 1320, 2310, 3255
Physics B.S.	MATH 1310, 1320, 2310, 3250, 3255, 4210, 4220

Advanced Placement

We give credit in the calculus sequence based upon the College Entrance Examination Board Advanced Placement Test (either AB or BC). It is the student's responsibility to have these scores sent directly to the Admissions Office prior to enrolling.

STUDENTS WITH PRIOR CALCULUS AND AP EXAMINATIONS		
AP Test and Score	Credit Awarded	Recommended Course
AB less than or = 3	none	MATH 1210 or MATH 1310
BC less than or = 3	none	MATH 1210 or MATH 1310
AB = 4 or 5	MATH 1310	MATH 1220 or MATH 1320
On BC exam: an AB sub-score = 4 or 5	MATH 1310	MATH 1220 or MATH 1320
BC = 4 or 5	MATH 1310 and 1320	MATH 2310 and/or MATH 3250