

MATHEMATICS AND STATISTICS AT VASSAR 2023/24

A Guide for Advisors

First-year students may wish to study mathematics and statistics for a variety of reasons. It is absolutely essential that each student get placed in the most appropriate first course, a choice for which they turn to their pre-major advisors to sort out. The student with too little experience will flounder in a course that is too advanced, and a student with too much experience will be bored in a course at too low a level as well as an intimidating presence to the appropriately placed students.

The following is an outline of introductory math and stats courses and the level of preparation expected for each. If there are any questions about applying these rules of thumb, don't hesitate to reach out to a member of the department for further clarification.

INTRODUCTORY COURSES

Math 121a (Single Variable Calculus) is the standard first-semester calculus sequence. It is intended for students who have had little or no experience with calculus. Math 121a is not open to students who have AP credit for calculus.

Math 126a or b (Calculus IIA: Functions and Integration) and Math 127a or b (Calculus IIB: Sequences and Series) are six-week courses that together form a standard "Calculus II" course. They serve multiple purposes:

- As a "Calculus II" course, the students complete "a full year of calculus."
- Bridging the gap between what is required by the 200-level courses and what the student learned in either a high school course that was not labeled advanced placement or the AB Calculus advanced placement course.

Students should NOT take 126/127 if they have no previous experience with calculus.

Math 144a (Foundations of Data Science, same as CMPU 144) focuses on students' development and practice of computational thinking and inferential thinking around working with data.

Math 220a or b/221a or b (Multivariable Calculus/Linear Algebra) is the sequence that is the appropriate sequel to Math 127. Both courses constitute the prerequisites for all 300-level mathematics courses. Math 220 is offered both semesters and satisfies the calculus premedical requirement by itself. Math 220 is recommended for entering students who have performed well on an AP Calculus exam, as discussed below.

Math 240a or b (Introduction to Statistics) This course will introduce the methods by which we extract information from data. Prerequisites for Math 240 are Math 126/127 or completion of the AP Calculus BC or other good high school calculus course.

Note: Math 144 does not serve as a prerequisite for any other mathematics course.

Note: Math 131, 141, and 142 are not being offered in 2023/24.

PLACEMENT INTO CALCULUS AND STATISTICS CLASSES

There are two advanced placement exams for calculus, labeled AB and BC. The following table summarizes the department's recommendations for proper placement into introductory courses based on these exams and the student's prior experience with calculus. Students with an unusual background or any other concerns should confer with the department.

Math experience	Recommended course
4 or 5 on AP Calculus BC	Math 220
3 on AP Calculus BC	Math 127 or 220; confer with department
4 or 5 AP Calculus AB	Math 127 and/or 220; confer with department
3 on AP Calculus AB	Math 126 followed by Math 127
1 or 2 on AP Calculus BC or AB	Math 121 or Math 126 followed by Math 127; confer with department
AP Calculus course, but no exam	Most likely Math 126/127 or 127; confer with department
A year-long calculus course in high school, no AP exam	Confer with department
No Calculus experience	Math 121; confer with department
Weak high school mathematical skills	Confer with department

Statistics experience	Recommended course
4 or 5 on AP Statistics and a good calculus class	Math 242, which acts a second course in statistics
1, 2, or 3 on AP Statistics and a good calculus class	Most likely Math 240; confer with department
A year-long statistics course in high-school, no AP exam	Confer with department

CREDIT

One unit of advanced placement credit is awarded with a score of 4 or 5 on either the AP Calculus AB or Calculus BC exam, or the Statistics exam. This unit of credit does not substitute for a Quantitative Course for the QA requirement.

THE CALCULUS CREDIT EXAM

The department also administers a calculus credit exam for students who did not earn advanced placement credit via the AP exam. This will be given Thursday, September 7, 2023 from 3:30–5 pm in Rockefeller 305. Interested students should contact the department administrative assistant, Ms. Underhill (Rockefeller 306 or 845-437-5525 or e-mail addressed to cunderhill@vassar.edu). No student may receive more than one unit of advanced placement credit for mathematics or statistics.

QA REQUIREMENT

All mathematics and statistics courses fulfill the requirement.

FURTHER QUESTIONS

Departmental advising will take place on Tuesday, August 24, 2023 from 9:00 am–12 pm in Rockefeller Hall 305 and from 10 am–12 pm in the Bridge for Laboratory Sciences atrium.

If you have any questions concerning any topic discussed above, please feel free to contact any member of the department. The chair, Benjamin Lotto, can be reached at 845-437-7437 or lotto@vassar.edu.