

Math 31A: Differential & Integral Calculus

Math 31B: Integration & Infinite Series

- [Math 31A: General Course Outline & Catalog Description](#)
- [Math 31B: General Course Outline & Catalog Description](#)
- [UCLA Calculus Sequences](#)

The goal of Math31AB is to provide a solid introduction to differential and integral calculus in one variable. The course is aimed at students in engineering, the physical sciences, mathematics, and economics. It is also recommended for students in the other social sciences and the life sciences who want a more thorough foundation in one-variable calculus than that provided by Math 3.

Students in 31AB are expected to have a strong background in precalculus mathematics, including polynomial functions, trigonometric functions, and exponential and logarithm functions. In order to enroll in 31A, students must either take and pass the [Mathematics Diagnostic Test](#) at the specified minimum performance level, or take and pass Math 1 at UCLA with a grade of C- or better.

Most students entering the 31-32-33 sequence at UCLA have taken a calculus course in high school and enter directly into Math 31B, for which there is no enforced prerequisite. Many students with a strong high school background in calculus skip the 31AB sequence and enroll directly in 32A.

The course 31A covers the differential calculus and integration through the fundamental theorem of calculus. The course 31B is organized so that the first week is devoted to topics that review both differential and integral calculus. This is done by treating numerical quadrature with error estimates at the beginning of 31B, out of the usual order. The course then proceeds to cover techniques of integration and applications of integration, with a brief introduction to differential equations. Some material on approximation by Taylor polynomials is also covered out of sequence. This topic is important for several of the Physical Science majors that do not require the course 33B.

Single-variable calculus is traditionally treated at many universities as a three-quarter or two-semester course. Thus Math 31AB does not cover all of the topics included in the traditional single-variable course. The main topics that are omitted are parametric curves and polar coordinates, which are treated at the beginning of 32A.

Ample tutoring support is available for students in the course, including the walk-in tutoring service of the Student Mathematics Center.

Math 31A is not offered every Spring Quarter. Students wishing to start calculus in the Spring may take 31A through University Extension in the Spring or in the Summer.

Recent enrollment statistics for 31A and 31B are given in the following tables.

Recent Enrollment Statistics

Math 31A

Year	Fall	Winter	Spring
1993-1994	590 (3 sections)	259 (2 sections)	(no section)
1994-1995	704 (5 sections)	422 (2 sections)	169 (2 sections)
1995-1996	741 (5 sections)	376 (2 sections)	110 (1 section)
1996-1997	731 (4 sections)	367 (2 sections)	(no section)
1997-1998	691 (4 sections)	327 (2 sections)	(no section)

1998-1999	684 (4 sections)	308 (2 sections)	(no section)
1999-2000	674 (4 sections)	325 (2 sections)	(no section)
2000-2001	631 (4 sections)	351 (3 sections)	115 (1 section)
2001-2002	569 (4 sections)	311 (2 sections)	94 (1 section)
2002-2003	524 (4 sections)	293 (2 sections)	107 (1 section)
2003-2004	420 (3 sections)	250 (2 sections)	(1 section)

Math 31B

Year	Fall	Winter	Spring
1993-1994	548 (4 sections)	483 (3 sections)	170 (2 sections)
1994-1995	707 (4 sections)	662 (4 sections)	313 (2 sections)
1995-1996	647 (4 sections)	678 (4 sections)	313 (2 sections)
1996-1997	629 (4 sections)	670 (4 sections)	337 (2 sections)
1997-1998	700 (4 sections)	707 (4 sections)	302 (2 sections)
1998-1999	832 (4 sections)	689 (4 sections)	321 (2 sections)
1999-2000	880 (6 sections)	655 (4 sections)	276 (2 sections)
2000-2001	892 (5 sections)	600 (4 sections)	260 (2 sections)
2001-2002	868 (5 sections)	513 (4 sections)	215 (2 sections)
2002-2003	737 (5 sections)	428 (3 sections)	218 (2 sections)
2003-2004	759 (4 sections)	446 (3 sections)	(2 sections)