Math 32AB: Calculus of Several Variables

- Math 32A: General Course Outline & Catalog Description
- Math 32B: General Course Outline & Catalog Description
- UCLA Calculus Sequences

Math 32AB is a traditional multivariable calculus course sequence for mathematicians, engineers, and physical scientists.

The course 32A treats topics related to differential calculus in several variables, including curves in the plane, curves and surfaces in space, various coordinate systems, partial differentiation, tangent planes to surfaces, and directional derivatives. The course culminates with the solution of optimization problems by the method of Lagrange multipliers.

The course 32B treats topics related to integration in several variables, culminating in the theorems of Green, Gauss and Stokes. Each of these theorems asserts that an integral over some domain is equal to an integral over the boundary of the domain. In the case of Green's theorem the domain is an area in the plane, in the case of Gauss's theorem the domain is a volume in three-dimensional space, and in the case of Stokes' theorem the domain is a surface in three-dimensional space. These theorems are generalizations of the fundamental theorem of calculus, which corresponds to the case where the domain is an interval on the real line. The theorems play an important role in electrostatics, fluid mechanics, and other areas in engineering and physics where conservative vector fields play a role.

Recent enrollment statistics for 32A and 32B are given in the following tables. In addition, beginning during the 1996-1997 academic year, parallel honors sections 32AH and 32BH were created. Anomalies in enrollment for 32AB for the 1997-1998 academic year were due to the renumbering of 33B as 31C.

Recent Enrollment Statistics

Math 32A

Year	Fall	Winter	Spring
1993-1994	397 (3 sections)	470 (3 sections)	372 (3 sections)
1994-1995	374 (3 sections)	480 (4 sections)	451 (3 sections)
1995-1996	441 (3 sections)	436 (3 sections)	376 (3 sections)
1996-1997	421 (3 sections)	409 (3 sections)	388 (3 sections)
1997-1998	271 (2 sections)	480 (3 sections)	556 (4 sections)
1998-1999	532 (3 sections)	559 (4 sections)	427 (3 sections)
1999-2000	579 (3 sections)	590 (3 sections)	404 (3 sections)
2000-2001	553 (4 sections)	583 (5 sections)	333 (2 sections)
2001-2002	542 (5 sections)	588 (5 sections)	276 (3 sections)
2002-2003	532 (4 sections)	521 (4 sections)	222 (2 sections)
2003-2004	633 (5 sections)	500 (4 sections)	(2 sections)

Math 32B

Year	Fall	Winter	Spring
1993-1994	256 (3 sections)	259 (2 sections)	292 (2 sections)
1994-1995	219 (3 sections)	214 (2 sections)	233 (3 sections)
1995-1996	254 (2 sections)	228 (2 sections)	246 (3 sections)
1996-1997	201 (2 sections)	249 (2 sections)	237 (1 section)
1997-1998	245 (2 sections)	143 (2 sections)	295 (2 sections)
1998-1999	329 (2 sections)	339 (2 sections)	363 (2 sections)
1999-2000	269 (2 sections)	328 (2 sections)	350 (2 sections)
2000-2001	252 (2 sections)	359 (3 sections)	373 (3 sections)
2001-2002	232 (2 sections)	295 (3 sections)	289 (3 sections)
2002-2003	201 (2 sections)	275 (2 sections)	290 (2 sections)
2003-2004	139 (1 section)	287 (2 sections)	(2 sections)