Lecture schedule based on Stewart *Calculus: Concepts and Contexts, 4th edition*
[See next page for explanatory comments.]

Section	Lectures	Topic
1.1	1	Four Ways to Represent a Function
1.2	1	Mathematical Models: A Catalog of Essential Functions
1.3	1	New Functions From Old Functions
1.5	1	Exponential Functions
1.6	1	Inverse Functions and Logarithms
2.1	1	The Tangent and Velocity Problems
2.2	1	The Limit of a Function[1]
2.3	1	Calculating Limits Using the Limit Laws
2.4	1	Continuity
2.5	1	Limits Involving Infinity
2.6	1	Derivatives and Rates of Change
2.7	1	The Derivative as a Function
2.8	1	What does f' Say about f?
3.1	1	Derivatives of Polynomials and Exponential Functions
3.2	1	The Product and Quotient Rules
3.3	1	Derivatives of Trigonometric Functions
3.4	1	The Chain Rule[2]
3.5	1	Implicit Differentiation
3.6	1	Inverse Trigonometric Functions and Their Derivatives
3.7	1	Derivatives of Logarithmic Functions
4.2	1	Maximum and Minimum Values
4.3	1	Derivatives and the Shapes of Curves
4.5	1	Indeterminate Forms and l'Hôpital's Rule
4.6	1	Optimization Problems

Note: The standard number of days a class meets in a quarter is 28 (for Winter) or 29 (for Fall and Spring). Allowing for two midterm exams, this leaves 26 or 27 meeting times. The suggested lecture schedule given above lists 24 textbook sections over 24 lecture periods.

The following topics may be discussed at the discretion of the instructor as time permits; however, some may be more technical than is appropriate for Math 10 and some care should be exercised when deciding which to include.

Section	Lectures	Topic
1.7	1	Parametric Curves
3.8	1	Rates of Change in the Natural and Social Sciences
3.9	1	Linear Approximation and Differentials
4.1	1	Related Rates

[1] The formal definition of a limit is not given in this textbook, and is usually avoided in the Math 10 sequence.
[2] If Section 1.7 is not covered, then skip "Tangents to Parametric Curves" in Section 3.4.

Mathematics 10A and 10B are single-variable differential and integral calculus courses intended for majors in life and social sciences. The most common majors are biology and economics. The sequence continues with multivariable calculus (10C) or elementary probability and statistics (11). The course meets three times a week in large sections conducted by the instructor. The students also meet in smaller (about 30-35 students) recitation sections once each week; these sections are conducted by teaching assistants. Throughout the year, the Teaching + Learning Commons provides drop-in tutoring for Math 10A, 10B, and 10C, on weekdays and Sundays. Hours of availability and other information can be found here:

`http://commons.ucsd.edu/students/math-chemistry-tutoring`

Math 10A in the Fall, 10B in the Winter, and 10C in the Spring are coordinated and follow a common calendar agreed upon by the instructors with common homework assignments, quizzes, midterms, and final examination.

Students are encouraged to use graphing calculators at times throughout the sequence. Calculators are used to facilitate computation and graphing, but such uses are always to facilitate mathematical understanding so that learning how to use the calculator should never be a primary focus of the course. Instructors and teaching assistants will be expected to support the TI-83, which is the recommended calculator for the sequence. The use of calculators on quizzes, midterms, and final examinations is at the discretion of the instructor; in some of those situations calculators with Computer Algebra Systems may be forbidden. Students may use graphing calculators other than the TI-83 at their own risk since no assistance will be provided for these.

The principal goal of Math 10ABC is for students to develop a solid understanding of the fundamental ideas of calculus. As a result, the emphasis is on developing a good understanding of why the ideas and procedures of calculus make sense. While a certain level of technical proficiency is essential for that understanding, more attention should be given to presenting rationales for underlying concepts and results and their applications than to proofs that may be too formal for the students or to intricate technical processes. Whenever possible, applications should be chosen from areas that are likely to be of interest to the students, with special emphases on biology and economics. The text often retreats to a level of formality that is probably inappropriate for this class; this should be a caution to the faculty not to replicate that error (from our point of view), but rather to try to complement it with greater attention to informal motivating arguments when possible. Similarly, some of the problems in the text appear to be more intricate and technical than is suitable for the students in this course; consequently, some care should be taken in assigning homework to assure that students develop needed technical competency along the way to acquiring solid understanding without being overwhelmed by inappropriate technical difficulties.

The sequence of topics in the text may not be everyone's first choice. The extent to which it should be followed depends upon the degree of coordination among instructors in addition to depending upon each instructor's taste. For simplicity, the course outlines presented here follow the order of the topics in the text. Similarly, the time allotted to each section represents our best estimate of the time that is need for the section in the context of a course with 30 or slightly fewer lectures.