Lecture schedule based on the OpenStax textbook *Calculus–Volume 1*:
`https://openstax.org/details/books/calculus-volume-1`

Section	Lectures	Topic
1.1	1	Review of Functions
1.2	1	Basic Classes of Functions
1.3	1	Trigonometric Functions
1.4	1	Inverse Functions
1.5	1	Exponential and Logarithmic Functions
2.1	1	A Preview of Calculus
2.2	1	The Limit of a Function
2.3	1	The Limit Laws
2.4	1	Continuity
3.1	1	Defining the Derivative
3.2	1	The Derivative as a Function
3.3	2	Differentiation Rules[1]
3.4	1	Derivatives as Rates of Change
3.5	1	Derivatives of Trigonometric Functions
3.6	1	The Chain Rule
3.7	1	Derivatives of Inverse Functions
3.8	1	Implicit Differentiation
3.9	1	Derivatives of Exponential and Logarithmic Functions
4.2	1	Linear Approximation and Differentials
4.3	1	Maxima and Minima
4.4	1	The Mean Value Theorem
4.5	1	Derivatives and the Shape of a Graph[2]
4.6	1	Limits at Infinity and Asymptotes[3]
4.7	1	Applied Optimization Problems
4.8	1	L'Hôpital's Rule

Notes

- 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 includes 26 lecture periods.

- The formal definition of a limit is not given in the Math 10 sequence, and so the corresponding section in the book (Section 2.5) is not included in the suggested schedule above.

- If time is short, Section 4.8 may be omitted. Students in the Math 10 sequence do not require l'Hôpital's Rule (but many of them will know it already from High School).

- If you have extra time, you may wish to include Section 4.10, which is titled "Antiderivatives". (This is the first topic of Math 10B.)

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[1]This section contains most of the differentiation rules, including the constant rule, the constant multiple rule, the power rule, the sum and difference rules, and the product and quotient rules. Consequently, it might be advisable to spend two lectures on this section.

[2]This section includes the first and second derivative tests.

[3]This section is about sketching graphs, so involves more than the title might suggest. It also includes the formal definition of a limit at infinity, which you may wish to omit, as the formal definition of limit is usually not included in the 10 sequence.

Math 10ABC Description

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. Hours of availability and other information can be found here:

`https://aah.ucsd.edu/content-tutoring/index.html`

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

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.

Please be aware that sometimes the text uses a level of formality that might be 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 might be more intricate and technical than is suitable for the students in this course; consequently, some care should be taken in assigning homework to be sure that students develop needed technical competency along the way to acquiring solid understanding without being overwhelmed by inappropriate technical difficulties.