Lecture schedule based on Hughes-Hallett, et al. *Calculus, 6th edition*
[See next page for explanatory comments.]

Section	Lectures	Topic
5.1	1	How Do We Measure Distance Traveled?
5.2	1	The Definite Integral
5.3	1	The Fundamental Theorem and Interpretations
5.4	2	Theorems About Definite Integrals
6.1	1	Antiderivatives Graphically and Numerically
6.2	1	Constructing Antiderivatives Analytically
6.3	1	Differential Equations and Motion
6.4	1	Second Fundamental Theorem of Calculus
7.1	1	Integration by Substitution
7.2	1	Integration by Parts
7.4	2	Algebraic Identities and Trigonometric Substitutions
7.6	1	Improper Integrals
7.7	1	Comparison of Improper Integrals
8.1	1	Areas and Volumes
8.2	2	Applications to Geometry[1]
11.1	1	What is a Differential Equation?
11.4	1	Separation of Variables
11.5	1	Growth and Decay
11.6	1	Applications and Modeling
9.2	1	Geometric Series
10.1	1	Taylor Polynomials

Note: 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
7.3	0.5	Tables of Integrals
7.5	1	Numerical Methods for Definite Integrals
8.4	1	Density and Center of Mass
8.5	1	Applications to Physics
8.6	0.5	Applications to Economics[2]
11.2	1	Slope Fields
11.3	1	Euler's Method
11.7	1	The Logistic Model

[1] Skip "Arc Length of a Parametric Curve"
[2] Skip "Supply and Demand Curves" and "Consumer and Producer Surplus"

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 Mathematics Department makes a Calculus Lab available to students every weekday with undergraduate tutors staffing the Lab. 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, teaching assistants, and the staff of the Calculus Lab 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.