

Mathematics 104  
Spring 2010  
CALCULUS

*Textbook: Thomas' Calculus – Early Transcendentals, Including Second-Order Differential Equations, 11th ed., Part One*

*Grading:* The Final Examination counts for somewhat less than half of the course grade, the Midterm Test for somewhat less than a quarter, and the rest of the grade is based on classroom quizzes and homework.

*Midterm Test:* Lasting ninety minutes, the midterm will be given the week of March 8–12, probably Wednesday evening.

*Final Examination:* Lasting three hours, the final exam will be given at a date between May 12 and May 22.

*Quizzes:* Classroom quizzes will be weekly, starting with the second week.

*Homework:* Homework assignments will be given and graded. Unless your teacher says otherwise, no partial credit will be given for wrong answers on the homework; the aim is to encourage careful work. Students are encouraged to work together on the homework; try each problem independently and then compare answers. Please staple your papers together, write clearly in sentences, and circle your answers. The homework grade will count only minimally as a direct component of the course grade, but the only way to learn this material and do well on exams is by working the homework problems.

*Web:* The course Web page is <http://www.math.princeton.edu/~nelson/104/>

## COURSE OUTLINE

<b>Week</b>	<b>Sections</b>	<b>Topics</b>
1.	8.1–8.2	Substitution and integration by parts.
2.	8.3	Partial fractions.
3.	8.4–8.5	Trigonometric substitution.
4.	8.8, 11.1	Improper integrals, sequences.
5.	11.2–11.5	Tests for convergence of series.
6.	11.6	Alternating series, absolute convergence.
7.	11.7	Power series.
8.	11.8–11.10	Taylor series.
9.	10.5, A.5	Complex numbers.
10.	C.1–3,5,8	First order differential equations.
11.	C.8,9,10(1 <sup>st</sup> 2 ¶s),12	Second order differential equations.
12.	6.1–6.3, 6.5	Volume, length, surface area.