

This syllabus is **tentative**. An on-line version, accessible through the class web page at <http://www.math.rutgers.edu/courses/527/527-f07/> will be updated periodically throughout the semester.

Section numbers refer to *Advanced Engineering Mathematics* (2nd edition), by Michael, D. Greenberg.

Date	Sections	Topics
9/4–9/18	4.1–4.3, 4.5, 4.6	Power series solutions of ordinary differential equations
9/20–9/27	5.1–5.6	Laplace transforms and applications to ordinary differential equations
10/2–10/9	7.1–7.5	Systems of differential equations and the phase plane
10/11	EXAM 1	All material covered through lecture of 10/4
10/16–10/18	7.1–7.5	Systems of differential equations and the phase plane (continued)
10/23–10/25	9.6–9.10	Vector spaces of functions, inner products, and orthonormal bases
10/30–11/13	17.1–17.8, 11.3, 18.1–18.3	Fourier series, Sturm-Liouville theory, applications to the diffusion equation on an interval
11/15	EXAM 2	All material covered through lecture of 11/8
11/20–11/27	17.1–17.8, 11.3, 18.1–18.3	Fourier series, Sturm-Liouville theory, applications to the diffusion equation on an interval (continued)
11/29–12/4	17.9, 17.10, 18.4	Fourier integrals and the Fourier transform, and the diffusion equation on infinite intervals
12/6–12/11	19.1, 19.2	The wave equation
12/14–12/20	FINAL EXAM	Date and time to be determined