MA 3132
Partial Differential Equations and Integral Transforms
Syllabus

Text: Elementary Applied Partial Differential Equations
R. Haberman, 3rd edition.

Hours	Sections	Topic
1-1	1.1,1.2	Heat conduction in a one-dimensional rod
1-2	1.3,1.4	Boundary conditions, equilibrium temperature distributions
Read	1.5	Heat equation in several dimensions
1-3	2.1, 2.2	Linearity
2-5	2.3	Heat equation with zero temperature boundary conditions
Read	2.3 Appendix	Orthogonality of functions
3-8	2.4,2.5	Boundary value problems, Laplace's equation
3-11	3.1-3.6	Fourier series
2-13	4.1-4.4	Vibrating strings
5-18	5.1-5.5	Sturm-Liouville eigenvalue problems
1-19	5.8	Boundary conditions of the third kind
Read	5.10	Approximation Properties
2-21	7.1-7.3	Separation of the time variable
2-23	7.4	Eigenvalue problem $\nabla^2\Phi + l\Phi = 0$
2-25	7.7	Vibrating circular membrane
3-28	8.1-8.3	Nonhomogeneous problems, eigenfunction expansions
1-29	8.5.8.6	Forced vibrations, Poisson's equation
5-34	12.1-12.6	The method of characteristics
2-36	10.1-10.3	Fourier transforms
4-40	10.4,10.6	Fourier transform solutions of PDEs
4-44		Exams and holidays