

MATH348. Harmonic Analysis. Syllabus.

Fourier series. Examples. Dirichlet and Fejer kernels and sums. Uniform and pointwise convergence of function sequences and Fourier series. Convergence results involving Dirichlet and Fejer sums. (6 lectures)

Integration theory (2 lectures)

Parseval's equality. Gibbs' phenomenon. (2 lectures.)

Laplace' equation in the disc and Fourier series. (2 lectures.)

Fourier integral. Its properties. Examples. The use Fourier Inversion Theorems.

Plancherel's formula. (8 lectures.)

Partial differential equations and Fourier integral. (2 lectures.)

Laplace transform. Applications. (4 lectures.)

Fourier transform, measure and probability. The Central Limit Theorem. Applications. (4 lectures.)

Revision. (6 lectures.)

Recommended Book

Fourier Series and its Applications, Gerald B. Folland. Brooks Cole. £40.
When I went into Blackwells on 20.9.04, four copies were on the shelf.