

# MA2331, EQUATIONS OF MATHEMATICAL PHYSICS I

Trinity College, Fall 2017

Course web page: <http://maths.tcd.ie/~parnachev/ma2331.html>

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Time&place of lectures: Maxwell Theatre, Hamilton Building Tuesday, 9-10, 16-17  
East End Building Lecture Theatre 2, Wednesday, 12-13

## Class material

1) Optional textbooks

*Advanced modern engineering mathematics*, Glyn James.

*Essential Mathematical Methods*, Riley and Hobson

2) Lecture notes (due to Conor Houghton and Darran McManus) – posted on web site

## Evaluation

10% – (approximately) bi-weekly homeworks. Check website regularly for announcements.

90% – Final exam

## Syllabus

Fourier series: complex and real. Parseval's theorem. Fourier transform and its properties. Convolution. Plancherel's theorem. Delta function. Gaussian integrals. Fourier transform of a gaussian. Applications of Fourier series and Fourier transform.

Multi-dimensional integrals (review). Vectors: dot and cross product, useful identities (review). Vector calculus: gradient, divergence and curl; useful identities. Line, surface and volume integrals. Green's theorems on the plane. Stokes and Gauss' theorems. Applications in physics.