LTCC Basic Course

Title: Pseudo-differential operators and applications to PDEs

Basic Details:
- Core Audience: all years, pure.
- Course Format: Extended: 5 x 2hr lectures

Course Description:

- Keywords: operator theory, partial differential equations, regularity theory

- Syllabus: Fourier transform and distribution theory, generalisation of differential operators, operator algebra, symbolic calculus, parametrix construction, regularity for solutions of elliptic equations, applications to higher order hyperbolic equations.

- Recommended reading: *Elementary Introduction to the Theory of Pseudodifferential Operators,* Xavier Saint Raymond, CRC Press, 1991.

- Additional Optional reading: *Introduction to the Theory of Distributions*, Friedlander and Joshi, Cambridge University Press, 2008.

- Prerequisites: Analysis 1, 2 and 3.

Format:
- No of discussion/problem sheets: 4 problem sheets with solutions provided toward the end of the module.
- Electronic lecture notes: lecture notes provided in advanced.

Lecturer Details:
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- Lecturer home institution: QMUL
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