

LTCC Advanced Course

Title: C*-algebras

Basic Details:

- Core Audience (1styr or 2nd/3rdyr: pure, app. or stats): 1st year, pure
- Course Format (extended or intensive): extended

Course Description:

- Keywords: C*-algebras, Gelfand-Naimark Theorems
- Syllabus: Banach algebras, spectral theory, C*-algebras, functional calculus, Gelfand-Naimark Theorem for commutative C*-algebras, positivity, approximate identities, ideals, quotients, positive linear functionals, Gelfand-Naimark-Segal construction, Gelfand-Naimark Theorem for arbitrary C*-algebras
- Recommended reading:
Kadison and Ringrose, "Fundamentals of the theory of operator algebras. Vol. I. Elementary theory", Pure and Applied Mathematics, 100, Academic Press, 1983.
Murphy, "C*-algebras and operator theory", Academic Press, 1990.
- Additional Optional reading:
Davidson, "C*-algebras by example", Fields Institute Monographs, 6, American Mathematical Society, 1996.
Pedersen, "C*-algebras and their automorphism groups", London Mathematical Society Monographs, 14, Academic Press, 1979.
- Prerequisites:
algebra (basic knowledge),
point-set topology (basic knowledge),
functional analysis (familiarity with material for instance covered in the first four chapters of Rudin's book "Functional Analysis")

Format:

- No of discussion/problem sheets (typically 4 for extended courses, and 1 for intensive courses, with solutions): 4
- Electronic lecture notes (these are strongly encouraged, as they will form the core of the individual study of the students): will be available
- Necessary support facilities: n/a
- Necessary software requirements for computing facilities: n/a
- Proposed timing: 5 sessions of two hours each
- Lecture/computer session/tutorial/discussion split (hours of each):
The sessions will consist of lectures.

Lecturer Details:

- Lecturer: Xin Li
- Lecturer home institution: Queen Mary University of London
- Lecturer e-mail: xin.li@qmul.ac.uk
- Lecturer telephone number: 02078825447