

2019 Pure Math 810
Operator Theory, Banach Algebras and C*-Algebras

K.R. Davidson

Class Meets: Tuesdays and Thursdays, 10:30–11:50 in MC 5403

Required Background: a course in functional analysis.
Courses in complex analysis and measure theory are very useful.

Course Outline

- Banach algebras: spectrum, functional calculus
- Commutative Banach algebras
- Non-commutative Banach algebras
- C*-algebras: ideals, states, GNS construction
- Von Neumann algebras: the density theorems
- Spectral theorem for normal operators.

Textbooks

- *An Introduction to Operator Algebras* by Laurent Marcoux, posted online.
- *Complete normed algebras* by F.F. Bonsall and J. Duncan, Springer, 1973.
- *C*-Algebras by Example* by K.R. Davidson, AMS, 1996.

Grading

- Assignments 70%
- Seminar and paper 30%
- no exams
- This is predicated on the class being in the range of 6–12 students.
If it is significantly larger, I will reconsider the options.