C* ALGEBRAS AND SPECTRAL THEOREM

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PRE-REQUISITES :   First course in functional analysis is a must. See http://math.iisc.ac.in/all-courses/ma223.html

INTENDED AUDIENCE : MSc 2nd year , PhD students and college lecturers

COURSE OUTLINE :

Aim is to prove the spectral theorem for bounded normal operators using C* algebras and projection valued measures. After review of spectral theorem for compact normal operators we will introduce Banach algebras, C* algebras and prove Gelfand-Naimark theorem. Spectral theorem will be proved after a detailed study of projection valued measures and their properties

ABOUT INSTRUCTOR :

None

COURSE PLAN :
Week 1: Review of finite dimensional spectral theorem
Week 2: Review of spectral theorem for compact normal operators
Week 3: Banach algebras
Week 4: C* algebras
Week 5: Gelfand-Naimark Theorem
Week 6: Projection valued measures
Week 7: Spectral theorem
Week 8: Spectral theory of * representations