School of Mathematics

Course 432 — Classical Fields 1998-99
(SS Theoretical Physics, optional JS Theoretical Physics, JS & SS Mathematics)

Lecturer: N. H. Buttimore

Requirements/prerequisites: 221, 231, 241

Duration: 21 weeks.

Number of lectures per week: 3

Assessment:

End-of-year Examination: One 3-hour examination

Description: Course 432 on classical field theory is approached from a Lagrangian viewpoint. In that sense it is a natural continuation from the S.F. course in Lagrangian and Hamiltonian dynamics. Classical, in this context, means non-quantized; the course will mostly be concerned with relativistic fields, and some background in special relativity is expected.

A substantial part of the course will be devoted to classical electro-dynamics, treated covariantly with emphasis on radiation and the propagation of energy-momentum. The range of topics in electro-dynamics and the level of treatment will correspond to the latter part of J.D. Jackson's book on Classical Electro-dynamics.

June 10, 1998