

Physics 215A — Particles and Fields

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Course Schedule:

Lectures MW 11:00–12:20 pm Mayer Hall 4322

Course Texts:

M. Srednicki, *Quantum Field Theory*, Cambridge University (2007)
S. Weinberg, *The Quantum Theory of Fields Vol. I*, Cambridge University (1995)
M.E. Peskin and D.V. Schroeder, *An Introduction to Quantum Field Theory*, Perseus Books Publishing (1995)

Course Topics:

Quantum Field Theory –Introduction
Poincare Group (Inhomogeneous Lorentz Transformations)
Quantum Fields (Scalar, Vector, Spinor)
Discrete Symmetries C, P, T and CPT Theorem
Feynman Rules
Scattering Theory
Cross-sections, Decay widths, Phase space
Canonical Quantization
QED

Homework: Homework will be assigned and graded. Homework assignments will be posted on course website <http://physics.ucsd.edu/students/courses/fall2007/managed/physics215a/>

Final Exam: The final exam will be a take-home exam, date TBA.