Instructor: Laurence G. Yaffe
Office: B404
TA: Steve Paik, paik@u, 543-9642, B418
Lectures: **11:00–12:20 am TTh**, PAB B114
Homework: Approximately bi-weekly assignments
Website: `http://courses.washington.edu/ph570`

Course grades will be based on performance on homework assignments.

Tentative Syllabus:

Interacting relativistic fermions Grassmann integration and Grassmann functional integrals. Feynman rules for fermions.

Gauge fields Classical gauge theory, Abelian & non-Abelian. Quantized gauge fields, gauge fixing, Feynman rules, basic QED

Renormalization and regularization regulator dependence, dimensional continuation, renormalization group

Books: This course has no single textbook; attending lecture and taking good notes is essential. The following books are recommended for certain topics:

A. Zee, *Quantum Field Theory in a Nutshell.* Breezy presentation, broad but not overly detailed.

L. Brown, *Quantum Field Theory.* Good introduction to modern methods, can be challenging.

M. Srednicki, *Quantum Field Theory*, `http://www.physics.ucsb.edu/~mark/qft.html` . New online textbook.

M. Peskin and Schroeder, *Introduction to Quantum Field Theory.* Good intro to relativistic QFT.

The above books are on reserve in the physics library.