Physics 772/773
Quantum Field Theory

Instructor: Jason Kumar
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Class meets:
M W 11:00am-12:15pm
WAT 417A
Office hours by arrangement

Recommended Textbook:
An Introduction to Quantum Field Theory
Michael Peskin and Daniel Shroeder

Supplemental Textbook: (optional)
The Quantum Theory of Fields (vol. I, II, III)
Steven Weinberg

Topics to be covered:

Quantization of scalar and fermionic fields
Quantization of gauge fields
Perturbation theory and scattering
Renormalization and quantum corrections
Quantum electrodynamics

Grading:

The course grade will be based on homework and exams. Students may work together on homework, but are expected to write up their own assignments, and should understand all submitted work.

60% -- homework
20% -- midterm(s)
20% -- final

Student Learning Objectives:

1) introduction to the fundamental concept of quantized field theory

2) development of skills in computing basic cross-sections relevant to quantum electrodynamics