

Physics 772

Quantum Field Theory

Instructor: Jason Kumar
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Class meets:
T Th 1:30-2:45am
WAT 417

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

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

60% -- homework
20% -- midterm
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