

Physics 773

Quantum Field Theory

Instructor: Jason Kumar
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Class meets:
T Th 9:00-10:15am
WAT 417

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

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

Topics to be covered:

Renormalization and quantum corrections

Quantum electrodynamics

The electroweak theory and electroweak symmetry breaking

The Standard Model

Grading:

The course grade will be based on homework and exams

60% -- homework

20% -- midterm

20% -- final

Student Learning Outcomes:

At the successful completion of this course, students will be expected to:

- 1) Have a basic understanding of renormalization in quantum field theory

- 2) Have a basic understanding of abelian and non-abelian gauge theory
- 3) Have an understanding of the Standard Model as a gauge theory with spontaneously broken symmetry