Quantum Field Theory 1

Spring 2022

Contact information
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This course is a synchronous class. It carries 3 credit.
Lectures: **T (12:50 - 2:05 PM)**
R (12:50 - 2:05 PM)
The class will meet in room **NPB 1200.**

Office hours: Thursday 3:55 - 4:45 PM or by appointments
Prerequisites: Special Relativity, Quantum Mechanics

Welcome to QFT I (PHY6648).

Course Description: Introduce the quantum fields as fundamental objects to student.

Course Goals and Objectives: the course will tell students how to quantize scalar, fermion and vector fields, and how to calculate S-matrix, cross sections and decay rates. And the course will give you a understanding of global and local symmetries in the field theory.

1. Introduction
2. Classical Field Theory
3. Scalar Fields
4. Fermions
5. Quantum Electrodynamics

The books that I recommended are
1) Quantum Field Theory and the Standard Model by M. Schwartz
2) The Quantum Theory of Fields by S. Weinberg

The homework will contribute 80% towards the final grade, while the final exam will count for 20%. You may refer to the Physics Department policy on incomplete grades. For additional

details regarding grading policies, see the university website: catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/

A guaranteed grading scale has been announced:

A: 90% A−: 85% B+: 80% B: 75% B−: 70% C+: 66% C: 62% C−: 58% D+: 54% D: 50% D−: 46%

These thresholds may be lowered if appropriate but they will not be raised.

Accommodations for Students with Disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Academic Honesty

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honorcode/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class."

Online Evaluations

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open dur- ing the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

Advising and Counseling

Due to the nature of the environment at the university, it is not uncommon for students to experience stressful situations, and “study harder” sometimes does not seem to work. If you find yourself in this situation, you are encouraged to seek confidential counseling, see: http://www.counseling.ufl.edu/cwc/.

Zoom Code of Conduct

The UF Student Honor Code and Student Conduct Code continue to apply to online behavior. You are expected to be professional and respectful while attending class on Zoom, if we ever need to switch to an online mode of instruction.