

# PHYS 7315 – Quantum Field Theory II

## Spring 2020

**Instructor:** Professor Joel Meyers ([jrmeyers@smu.edu](mailto:jrmeyers@smu.edu))

**Lectures:** TuTh 2:00-3:30 PM, Fondren Science Building 157

**Textbook:** *Concepts of Elementary Particle Physics*, Michael Peskin (ISBN 9780198812197)

### Other Useful Reading:

- *Quantum Theory of Fields*, Vols. I and II, Steven Weinberg
- *An Introduction to Quantum Field Theory*, Michael Peskin and Daniel Schroeder
- *Quantum Field Theory*, Mark Srednicki

### Grading:

- Homework - 60%
- Quizzes – 20%
- Final Exam (Take-home) - 20%

**Office Hours:** Fondren Science Building 209, by appointment

### Topics to be covered:

- Symmetry principles
- Rates and cross-sections
- Strong Interaction
- Weak Interaction
- Ingredients of the Standard Model of Particle Physics

**Homework:** Homework will be assigned on a (roughly) weekly basis and will be due at the beginning of class one week after it is assigned (unless otherwise specified). Students are allowed and encouraged to work in groups on homework, but each student must submit unique and individual answers to be graded.

**Quizzes:** Short quizzes (5-10 minutes) will be given to start most classes. Some will test basic concepts from previous lectures and readings. Others will be ungraded (i.e. full credit will be given for any attempt) and will be used to assess background knowledge before beginning a new topic. The lowest 3 quiz scores will be dropped (including quizzes missed for absences without prior arrangements).

**Final Exam - Take-home exam due Tuesday May 12 by 2:00 PM:** There will be a cumulative take-home final exam for which you may use any textbooks, notes, and resources that you wish, but you must work independently. You may ask questions of the instructor, but not of your fellow students for the final exam.

**Disability Accommodations:** Students needing academic accommodations for a disability must first register with Disability Accommodations & Success Strategies (DASS). Students can call 214-768-1470 or visit <http://www.smu.edu/Provost/SASP/DASS> to begin the process. Once approved and registered, students will submit a DASS Accommodation Letter to faculty through the electronic portal DASS Link and then communicate directly with each instructor to make appropriate arrangements. Please note that accommodations are not retroactive and require advance notice to implement.

**Religious Observance:** Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. ([See University Policy No. 1.9](#))

**Excused Absences for University Extracurricular Activities:** Students participating in an officially sanctioned, scheduled University extracurricular activity should be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (See [2018-2019 University Undergraduate Catalogue](#))

**Attendance:** Pursuant to SMU policy governing student wellbeing, attendance will be monitored and, if you are absent from class frequently or for more than one week, I will enquire by email whether everything is OK. If I do not receive a response within 1 week or receive a response which I am concerned about, I will forward those concerns to the Dean of Student life. If I do not receive a response within 1 week and your grades are below passing level, I will administratively drop you from the class.