

- Instructor:** Prof. Ismail Turan
Room 413, **Extension:** x5083
Email: ituran@metu.edu.tr
- Textbook:** *Introduction to Elementary Particles*, Second Revised Edition, by David Griffiths. As a supplementary textbook, just pick up any other introductory particle physics book from the library which suits your needs.
- Web Page:** Posting homeworks and updates will be done through ODTUClass:
<https://odtuclass.metu.edu.tr/>
- Prerequisite:** Consent of the department (Actually, **Phys 202** is a “must”. It is also advisable to take **Phys 300** and even **Phys 431** before this course).
- Schedule:** **Thursday 12:40-13:20 and 13:40-14:20** Face to Face in P5/P1
- TA Info:** Kerim Demirel, **Room** 209, **Extension:** x3270, **Email:** demirelk@metu.edu.tr
- Recitations:** TBA
No regular recitations. Need-based recitations will be organized as we go along with lectures.
- Lectures:** **Online Part:** I will upload weekly videos to the ODTUClass web page. This part of the class will be asynchronously but in these videos I will deliver the lectures in real time (no slides) so that I will make sure that you will get just one week’s material, not more.
Face-to-Face Part: Even though the course could be followed through online videos, we will have some in-classroom lectures every week. I will summarize that week’s material, elaborate certain parts further etc.
- Exams:** All the exams are going to be **face-to-face**.
- Grading:** There will be **one midterm exam** and a final. Homeworks will be given. For your final grade, the midterm and homeworks count 22.5% each, and the final counts 40%.
- Topics:**
- **Chapter 1: Introduction to Elementary Particles;** *Photon, Mesons, Neutrinos, Strange Particles, The Quark Model, The Standard Model.*
 - **Chapter 2: Elementary Particle Dynamics;** *Fundamental Forces, QED, QCD, Weak Interactions, Decays and Conservation Laws.*
 - **Chapter 3: Relativistic Kinematics;** *Lorentz Transformations, 4-vectors, Energy and Momentum, Collisions, Examples.*
 - **Chapter 4: Symmetries;** *Conservation Laws, Angular Momentum, Addition of Angular Momenta, Spin-1/2, Flavor and Discrete Symmetries, Parity, Charge Conjugation, CP, Time Reversal, CPT.*
 - **Chapter 6: The Feynman Calculus;** *Decay Rates, Cross Sections, The Golden Rule for Decays and Scatterings, Two-particle Decays, Two-body Scattering, Feynman Rules for a Toy Model.*
- Exam Dates:** **Midterm Exam:** Saturday, 4 December, 2021 (after finishing Chapter 3).
Final Exam: TBA

Code of Integrity:

All students are expected to have academic integrity principle in all academic works. That is, a student must submit work only the student’s own. Students shall comply with academic integrity codes and shall avoid situations likely to violate this code since academic dishonesty diminishes credit to the academic community.