

Modern Physics

Instructor: Assoc. Prof. Dr. Taylan Akdoğan

E-mail: taylan.akdogan@boun.edu.tr

Phone: 0212-359 70 83

Office: Boğaziçi University, Kuzey Kampüs, KB 331K

Course assistant: TBA

Office hours: I will not be able to hold an office-hour at Bahçeşehir University. However, you can visit my office at Boğaziçi University with appointment. And, feel free to send questions via email about the course subjects at any time. I will be prompt to reply them as efficiently as possible.

Course schedule: TBA

Course page: “<http://alum.mit.edu/www/akdogan>”. Problem sets, exams, and general course information will be found here.

About the course: Modern Physics with an emphasis on physical thinking and order of magnitude estimates. The subjects covered by this course will include the special theory of relativity, applications of the Schrödinger equation, hydrogen atom and applications of quantum theory to nuclear structure, nuclear reactions, quantum statistics, condensed matter physics, elementary particles and their interactions, astrophysics, cosmology, in addition to some discussions about the latest progress in the area of experimental and theoretical physics.

Prerequisites: Halliday-Resnick level fundamental level physics.

Required text: *Modern Physics from α to Z^0* by Rohlf (Wiley, 1994)

Attendance: I expect you to come to class regularly and on time. You should be prepared to discuss the textbook material and to have worked on the assigned homework problems. I reserve the right to adjust your final course score up or down by a grade step based on the quality and extent of your contributions.

Homework: This will be a significant part of the learning process for this class. Please staple the pages securely and leave them on my desk when you **enter** the classroom (i.e., do not work on the problem set during the class). The solutions will be discussed briefly during the problem sessions. No homework will be accepted once the solutions are given. Late homework can be accepted without penalty only if you have a valid excuse and the solutions are not discussed.

I encourage you to work collaboratively on the problems but you should understand that when you write up solutions the work is to be your own (i.e., *do not just copy someone's solution*). Do not be shy about coming to me or course assistants for help with the homework.

Exams: There will be two midterms, and a final exam. All exams will be closed book/closed notes. Calculators are neither needed nor allowed. **You** can prepare a cheat-sheet of size A4 to be used during the exams, but you cannot share it with your friends.

Grading: The weights that will determine the cumulative grade are as follows:

	Contribution
Homework	20%
Midterm I	20%
Midterm II	20%
Final	40%

The final grades will be determined according to the distribution of cumulative grades and the classroom contributions.