

HACETTEPE UNIVERSITY, DEPARTMENT OF PHYSICS ENGINEERING
FREQUENTLY ASKED QUESTIONS AND ANSWERS

1. What is the language of instruction? Is there a Preparatory Program?

The language of instruction in our department is 30% English, and students are required to complete one year of compulsory English preparatory education before starting the undergraduate program.

2. What is the difference between Physics and Physics Engineering?

Essentially, there aren't many major differences between the two programs. Physics departments focus more on explaining natural phenomena and theoretical foundations, while Physics Engineering emphasizes the application of these principles in industry, electronics, and manufacturing. Graduates of Physics Engineering receive both the title of "Physicist" with theoretical knowledge and practical engineering training. Physics programs provide more theoretically oriented education, while Physics Engineering programs provide more application-oriented education.

3. What are the advantages of graduating from an Engineering Physics program?

Firstly, having an "Engineering" degree makes you a preferred choice in most sectors. The skills you gain from hands on training such as the ability to collaborate in a team, access information, transfer knowledge, discuss information, and prepare reports will allow you to stand out.

4. What does practice-oriented education mean?

Our program includes a total of 10 laboratory courses; 2 of these are Chemistry Laboratory courses. In these courses, students are divided into groups of 3-4 and perform and report on all experiments together throughout the semester. This helps them develop teamwork skills. In the fourth year, we have three more applied courses: Graduation Project, Design in Physics Engineering, and Interdisciplinary Project Work. These courses are conducted directly by the students under the supervision of their advisors. At the end of the semester, students report on their work and present it to a jury.

5. How are laboratory courses conducted?

Students enrolled in the laboratory course are divided into groups of 3-4 people, depending on the number of experimental setups. Each group performs all experiments together throughout the semester. Students are required to come prepared for the experiments. Before starting an experiment, the experiment supervisor asks students questions related to the experiment. If the answers indicate that the students are prepared, they are allowed to proceed with the experiment. After completing their experiments, each student independently analyzes the results and submits their findings as a report to the experiment supervisor. Each student receives a grade from their oral exam and report. The average of the grades from all experiments is used as the semester

grade. For the final exam, students randomly select and perform one of the experiments they completed during the semester. Then, they are given an oral exam on both their own experiment and all the other experiments to determine their final exam grades.

6. What career opportunities are available for Engineering Physics graduates?

Our graduates have a wide range of career opportunities. They can work as R&D engineers in the defense industry (ASELSAN, ROKETSAN, TUSAŞ), nanotechnology centers, semiconductor manufacturing, nuclear energy, and the medical physics sector. They can also pursue academic careers, working as faculty members at universities and easily taking on roles in R&D projects.

7. What is the structure of the Engineering Physics curriculum?

The first two years of our program generally cover classical physics before 1900. The last two years focus on courses covering topics that emerged in the early 1900s, primarily quantum physics, but also statistical physics, nuclear physics, solid-state physics, atomic and molecular physics, nanotechnology, and materials science.

8. In which areas can I specialize during my studies?

Specialization in a particular field usually begins in the third year. Students wishing to advance in theoretical fields can take elective courses in areas such as Mathematical Methods in Physics III, Mathematical Methods in Physics IV, Quantum Mechanics, Group Theory, General Relativity, Cosmology, and Special Relativity. For example, students wishing to specialize in health physics can take elective courses in areas such as Biophysics, Health Physics, Applied Radiation Physics, and X-rays. On the other hand, students wishing to specialize in the defense industry can take elective courses in areas such as Optics and its applications, Thin film manufacturing technologies, Semiconductor device physics and technology, and Optoelectronics. Students wishing to specialize in atomic and molecular physics can take elective courses in areas such as NMR and ESR Spectroscopy, X-rays, Spectral analysis methods, and Molecular Physics.

9. What advice would you give to prospective students? Is the program difficult?

In general, all programs require systematic study discipline. This is almost a fundamental rule for success in science and engineering programs. Students who want to choose the physics engineering program should, first and foremost, love physics. They should generally have an aptitude for mathematics. They should also possess an imagination that allows them to visualize physical phenomena. As with all programs, the physics engineering program also has challenging courses. However, for students who study regularly, the difficulty of the courses does not pose any problem.

10. What is your academic staff like?

The department has 12 Professors, 4 Associate Professors, 4 Assistant Professors, 2 Lecturers, and 8 Research Assistants. Our faculty members are expert academics, the vast majority of whom are graduates of the department who have decided to continue their academic careers within the department. Our faculty members are highly helpful and supportive.

11. I would like to pursue an academic career. What are the requirements?

Graduates wishing to pursue a master's degree in our department must have a weighted academic GPA (graduation grade) of at least 2.50/4.00. Applicants must also have achieved a minimum score of 60/100 on the ALES exam and a minimum score of 60/100 on the YDS exam. Candidates meeting these requirements have a high chance of being accepted into our department for their master's degree.

12. Are Minor or Double Major programs available?

Our department has a reciprocal minor program protocol with the Mathematics Department of the Faculty of Science. In addition, our students can also pursue minors in Industrial Engineering and Biology. Regarding double majors, no initiatives have yet been started between engineering faculty departments. However, it is expected that the necessary steps will be taken at the dean's office in this regard in the near future.

13. Is your department accredited?

Yes, our department has MÜDEK Accreditation. The initial accreditation process began in 2014 and is still ongoing.

14. Why has your department's admission ranking improved in recent years?

Our department's minimum admission score ranking has dropped from 207,000 to 60,600 in the last 8 years. It is believed that one of the most important reasons for this is the successful performance of our graduates in their professional lives. The fact that our graduates have become well-known and visible in the business world is considered to have attracted the attention and interest of prospective students considering our department.

15. How many students graduate each year? How many graduate within four years?

Our department graduates an average of 30 students per year. However, the number of students who graduate without losing a semester is usually limited to 2-3. Nevertheless, completing a challenging program like physics engineering in 9 or 10 semesters is quite normal. For example, in 2026, the number of students completing the program full-time (8 semesters) have been 1, while the number of students completing it in 9 semesters have been 8.

16. What Erasmus opportunities are available?

On average, 2-3 of our students have the opportunity to go to universities abroad for one or two semesters each year through the Erasmus program. The European universities that our students most frequently attend are Umea University (Sweden), University of Essen (Germany), and Politechnika Czestochowska University (Poland).

17. Do you maintain contact with your graduates?

Yes. For the past three years, we've been organizing an "Alumni Reunion Event" on a suitable weekend in May. We invite our current students to this event. This allows our current students to learn firsthand about the challenges, advantages, and disadvantages that our alumni face in their professional lives. We also invite 3-4 alumni for question-and-answer sessions with our students throughout the semester.

18. Is an internship compulsory? Where can I complete it?

Yes. A 30-working-day internship is compulsory. Students may complete their internships at institutions such as: TENMAK, MTA, TÜBİTAK, TSE, TARLA, ASELSAN, ROKETSAN, HAVELSAN, Türk Traktör, Hospitals (e.g., Oncology and Radiology Departments), Türk Telekom, Vestel, Various R&D and Technology Centers

19. Which universities offer Engineering Physics in Türkiye? Where can I receive the best education?

Engineering Physics is offered at four public universities in Türkiye: Istanbul Technical University, Hacettepe University, Ankara University, Gaziantep University and at one foundation university: Istanbul Medeniyet University. Among these institutions, Hacettepe University Engineering Physics has the second-highest admission ranking, following Istanbul Technical University. In our opinion, Hacettepe University offers one of the strongest practice-oriented Engineering Physics programs in Türkiye.

20. How are students evaluated? Is grading based on a curve? Is attendance compulsory?

In theoretical courses, success is determined by summing the percentages of the midterm and final exams to obtain a grade out of 100. This grade is converted to a letter grade in accordance with the principles specified in our University's Undergraduate Education and Training Regulations. We do not use a bell curve grading system. Attendance is compulsory for 30% of theoretical courses and 20% of practical courses.