DEPARTMENT OF PHYSICS

Location: 112 Archer Building

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Chair: Dr. Rafael De La Madrid

Physics is the most fundamental of the sciences. Indeed, one can say, everything derives from physics. All physical principles and the very laws of the universe stem from physics: ranging from the whispering of gravitational waves resulting from the cataclysmic merging of two black holes a billion years ago, to how the sun shines so brightly and why it will continue to do so for another 4 billion years, to the forces that bind together the atoms that make up the transistors in this computer, to the interactions of electromagnetic radiation with this screen monitor and your eye, which enables you to read these very words. Physics is all about the infinitesimally small to the infinitely big. Therefore, having a solid background in physics will serve you well in succeeding in other STEM fields, such as astronomy, biology, chemistry, geology, and all aspects of engineering.

The study of physics is subdivided into several basic areas of study, including Newtonian (classical and celestial) mechanics, statistical physics and thermodynamics, electricity & magnetism, quantum mechanics, optics and photonics, solid-state physics, nuclear physics, particle physics, and Einstein's general relativity. The study of physics offers a vast multitude of opportunities. A good foundation in physics will prepare a student for specializing in any number of areas of research, as well as provide for an excellent background upon entering such wide-ranging fields as electrical engineering, computer science, astronomy, nuclear engineering, unconventional energy sources, imaging, biology, mathematics, communications, meteorology, oceanography, law, medicine, and teaching. And most importantly, physics is fun!

The emphasis of the Lamar University physics program is on quality instruction at the undergraduate level. We strongly focus on face-to-face classroom instruction and encourage one-to-one interactions, with a personalized approach. Undergraduate students are strongly encouraged to participate in research activities directed by faculty mentors. We have a very solid track record. The program of study in physics is one of the most flexible in the university. It offers many options and electives that make it possible to get a good foundation in physics as well as the necessary background to go into many other fields. The undergraduate degree offered is the Bachelor of Science (B.S.).

Physics as a Major/Minor

Bachelor of Science in Physics:

- 120 credit hours

Double Major in Physics:

- 24 hours: University Physics I and II, Modern Physics, plus 13 hours at 3000-4000 level. Mathematical Methods for Physical Sciences (PHYS 3314) is part of the requirements.

Dual Major in Physics (two separate BS degrees):

- 30 hours on top of the first degree

For Double and Dual degrees, the most popular options are to combine Physics with Engineering or Mathematics. Combinations are also available with Chemistry and Computer Science. A physics advisor can give you specific details on your choice of the field combinations.

Minor in Physics:

- 20 hours: University Physics I and II, Modern Physics, plus 9 hours at 3000-4000 level.

Students wishing to pursue a minor in Physics (20 hours) are strongly encouraged to consider either the Double Major in Physics (24 hours) or the Dual Degree (first degree plus 30 hours) to receive a deeper professional understanding of Physics and increase their job marketability. The Physics degree is considered, by far, one of the most valuable degrees in STEM as it lends itself to all aspects of science and engineering. The job prospects are exceedingly high.

In the words from DegreesFromAnywhere (https://degreefromanywhere.com/about-degreefromanywhere-com/), the Physics degree equips you with valuable skills, including analytical and problem-solving abilities. These transferable skills are highly valued by employers in diverse sectors. An undergraduate degree in physics provides a strong foundation for further specialization through postgraduate studies. Job prospects are plentiful in academia, research, and other sectors that value these skills. Interestingly, according to a survey conducted by the American Physical Society, 75% of physics graduates find employment within six months of graduation. This statistic highlights the demand for individuals with a physics background in today's job market.

Programs

- Physics (B.S.) (https://catalog.lamar.edu/college-arts-sciences/physics/physics-bs/)
- Physics Minor (https://catalog.lamar.edu/college-arts-sciences/physics/physics-minor/)