DEPARTMENT OF PHYSICS AND ASTRONOMY

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Program Summary

Physics and Astronomy are for creative and curiously-minded students who want a shot at cracking Nature's secret source code — people who are excited by questions like “What happened right after the Big Bang?”, “How does time warp near a black hole?”, or “Can atomic systems coexist in multiple realities at once?”

Physics and Astronomy are for inventive and enterprising students who want to design humanity's future — people who are motivated by questions like "Can clean fusion energy propel equitable access to technology and resources?", "How will quantum computing revolutionize our link with information?", or "When will self-sustaining communities be established on Mars?"

Physicists work to understand the most basic laws of nature in the most simple and general way possible. Physicists likewise apply this understanding to solving engineering and design problems in every facet of modern life. Our faculty specialize in Materials Science (exploring properties of dense atomic systems computationally and with x-ray / atomic-force imaging, and designing superior molecular compounds for engineering applications like batteries and superconductors) and Particle Physics (theory and high-performance computer simulation involving elementary constituents of matter and their interactions, the Large Hadron Collider in Switzerland, the search for dark matter, and mysterious properties of the neutrino).

Astronomers seek to understand our place in the Universe, and to unravel clues about its history from light reaching us across the expanse of space. Our faculty take a special interest in the data-based improvement of approaches to science education, and have research expertise in the topics of stellar spectroscopy and ionized gas in spiral galaxies. The university observatory houses several telescopes for in-person stargazing, and our indoor planetarium provides immersive simulations of the night sky as viewed from any location and date.

Vision & Mission

The Department of Physics and Astronomy at Sam Houston State University will be a preferred source of technically equipped employees and scholars, and a vital participant in the global pursuit of fundamental scientific knowledge.

- Faculty will make meaningful professional contributions to their respective research disciplines and actively mentor their students in the practice of scientific investigation.
- Students majoring in physics and pre-engineering, and minoring in astronomy, will be effectively prepared to confront the quantitative, conceptual, and analytical challenges associated with a related career or continuing education.
- All students, including those from other degree programs, will be exposed to the sciences in a manner which nurtures curiosity and develops critical thinking and problem-solving skills that may be usefully projected onto their various professional endeavors and roles in society.

Academic Programs

The Department of Physics and Astronomy currently offers only undergraduate degree programs. See the current undergraduate catalog for more details.

Courses

The Department of Physics and Astronomy does not currently offer graduate courses. Please consult the current undergraduate catalog for course offerings.