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Sam Houston State University

MEMBER THE TEXAS STATE UNIVERSITY SYSTEM

Graduate Admissions

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COLLEGE OF SCIENCES

SAM HOUSTON STATE UNIVERSITY GRADUATE PROGRAMS

THE DIFFERENCE IS **HERE**



SUCCESSFUL SCHOLARS LEAD BY EXAMPLE. FIND
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WHAT SETS US APART SETS YOU APART.



FOR MORE THAN 130 YEARS, SAM HOUSTON STATE

UNIVERSITY FACULTY HAVE BEEN PREPARING STUDENTS
FOR MEANINGFUL LIVES OF ACHIEVEMENT. SHSU'S MOTTO,
"THE MEASURE OF A LIFE IS ITS SERVICE," ECHOES ACROSS
ITS SEVEN COLLEGES THROUGH STUDENT RESEARCH,
CREATIVE ENDEAVORS, AND COMMUNITY SERVICE. SHSU
IS CLASSIFIED AS A "DOCTORAL RESEARCH UNIVERSITY"
BY THE CARNEGIE COMMISSION ON HIGHER EDUCATION.

COLLEGE OF SCIENCES

The College of Sciences strives to foster scientific literacy, analytic abilities, and the knowledge and competencies necessary for graduates to succeed as professionals working in science-based careers. Embracing high standards, ethical practices and personalized student-faculty interaction, the College dedicates itself to excellence in teaching, engagement in quality research, and active community service. The College of Sciences offers eleven graduate degrees and five graduate certificates among seven academic departments.

DEGREE PROGRAMS

AGRICULTURAL SCIENCES

The **AGRICULTURE, MS** is designed to further the professional competence of individuals engaged in production agriculture, careers in agricultural and related agencies, businesses and industries, or agricultural education and extension. The addition of certification in Agricultural Sciences and Technology provides the opportunity to teach in Texas public schools. Explore faculty research areas:

<http://bit.ly/1iK7w8R>

The Department of Agricultural Sciences and Engineering Technology maintains multiple education centers. The Agriculture and Horticulture Centers house an Indoor Arena, Meat Science Lab, Equine Science Facilities, and greenhouses. The Harrell Agricultural Engineering Technology Center provides training opportunities in the areas of power and machinery, electrification, geometrics, soil and water conservation, irrigation and drainage, bio-fuels, and wood/metal construction and fabrication.

The Industrial Technology facilities include specialized laboratories for computer drafting; solar, wind, and water energy; electronics and computer technology; construction; and safety management. The 1,740-acre Gibbs Ranch Education and Research Facility serves as a living laboratory for all aspects of agricultural and natural resource management.

BIOLOGICAL SCIENCES

The **BIOLOGY, MS** is designed to prepare students for a related doctoral program or for those planning to pursue careers as professional biologists or community college teachers. This degree is research-oriented and requires the completion of a thesis project designed in collaboration with faculty mentors. The Biological Sciences graduate programs provide opportunities to study viruses, bacteria, protists, fungi, plants, and animals, and to investigate the biochemical, physiological, anatomical, behavioral, or ecological processes that make each organism unique. The **BIOLOGY, MA** is a non-thesis option available for those who wish to enhance their subject knowledge and/or teach at the community college level. Explore Biological Sciences faculty interests: <http://bit.ly/1hgmAzC>

The Department of Biological Sciences houses an animal rearing facility, a greenhouse, and laboratories with scanning electron microscopes and modern molecular biology research equipment. Biological Sciences maintains the Warner Herbarium, Sam Houston State Vertebrate Museum, Texas Bird Sound Library, and the Center for Biological Field Studies, a 250-acre field station within five miles of campus that contains the Southeast Texas Applied Forensic Science Facility, one of six "body farms" in the nation.

CHEMISTRY

The **CHEMISTRY, MS** is a two-year degree that requires students to complete course work in at least four of the following areas of chemistry: analytical, biochemistry, environmental, inorganic, organic, and physical; and to conduct an independent research project culminating in a written thesis. A non-thesis option is also available. Our faculty and students regularly work in collaboration with other colleges and universities, private industries, and government agencies, such as the University of Santiago in Chile, University of Siegen in Germany, ExxonMobil, U.S. Department of Energy, U.S. Army, and Texas Army National Guard. For a description of the areas and specific projects in which our faculty experiment: <http://bit.ly/1b21Lm3>

The Department of Chemistry houses a full array of chemical instrumentation, including HPLC, GCMS, X-Ray Crystallography, and Nuclear Magnetic Resonance.

COMPUTER SCIENCE

The Department of Computer Science operates a number of specialized laboratories for networking, robotics, data recovery, malware analysis and mobile device forensics. The department also operates a virtual machine farm for online and sandboxed applications.

The **COMPUTING AND INFORMATION SCIENCE, MS** is a traditional CIS program designed for students looking for advanced software engineering qualifications or for a profession beyond a computational or scientific undergraduate degree. The program

utilizes state-of-the-art software, software development methodologies, project management techniques, and hardware.

Offering the first **DIGITAL FORENSICS, MS** degree, Sam Houston has been running this program for nearly a decade, producing graduates of the highest caliber working in law enforcement, public safety, and national security. The program is designed to provide professional expertise and understanding in developing new approaches in the detection, preservation, and analysis of digital evidence.

The online **INFORMATION ASSURANCE AND SECURITY, MS** is recognized as one of the Best Online Graduate Computer Information Technology Programs in U.S. News and World Report's 2014 rankings. This program provides students with the knowledge and methods to effectively harden and secure network systems, prevent network damage, perform risk assessment and plan for disaster recovery.

Faculty members pursue a wide range of interests in the field, from design of programming languages, to neural networks and other aspects of networking, to data mining, informatics, and cryptography. Learn more about CS faculty: <http://bit.ly/Hy52iu>

GEOGRAPHY AND GEOLOGY

The applied **MS IN GEOGRAPHIC INFORMATION SYSTEM (GIS)** provides students with the critical knowledge to succeed in the challenging world of geospatial technologies. This includes advanced classes and labs in global positioning systems (Trimble), remote sensing (ERDAS IMAGINE), GIS (ArcGIS) and web based mapping and spatial analysis. In particular, applications of these technologies in the oil and gas industry, parcel mapping, local government, national security and market research are featured. The department also offers a graduate certificate in Geographic Information Systems. Explore GIS faculty interests: <http://bit.ly/1c4QpBA>

The Department of Geography and Geology offers a modern Geographic Information System lab for research and teaching and sophisticated instruments for geological analysis.

MATHEMATICS AND STATISTICS

The **MATHEMATICS, MS** faculty research includes combinatorics, commutative algebra, algebraic statistics, functional analysis, algebraic geometry, topology, applied mathematics, numerical analysis, mathematical biology, and differential equations. Graduates of this program typically seek career opportunities in actuarial science, computer science, operations research, biomathematics, cryptography, accounting/finance, and the oil and gas industry. The **MATHEMATICS, MA** is a non-thesis option available for those who wish to enhance their subject knowledge and/or teach at the community college level.

The **STATISTICS, MS** is designed to provide individuals with the academic foundation needed to pursue doctoral studies; to prepare competent statisticians who are equipped to accept responsibilities in business, industry, and public service positions; and to present a supplemental graduate program for students specializing in areas where statistics are readily used, such as social sciences, criminal justice, and the physical sciences. Our graduates are regularly recruited by top statistics PhD programs nationwide. Others are employed as data analysts for major medical centers and pharmaceutical companies, as research scientists for marketing and banking firms, and as college instructors and professors. Explore our faculty interests: <http://bit.ly/1fmsDMY>

ADDITIONAL FACILITIES

The Department of Physics has labs for material science analysis, including an x-ray diffractometer.

The Texas Research Institute for Environmental Studies (TRIES), a major research institute within The Texas State University System located at SHSU, houses state-of-the-art equipment utilized by faculty and students. The TRIES visualization laboratory is focused on the development of virtual reality simulations, distributed processing, computer modeling and custom software development, providing hands-on experience for GIS students.

SCHOLARSHIPS AND PROGRAMS

The **SPECIAL GRADUATE SCHOLARSHIP** is a prestigious scholarship from the College of Sciences. It is awarded each fall and spring semester to select graduate students whose academic accomplishments and university or community citizenship are excellent in every respect.

Many of the College of Sciences academic departments offer scholarships for their unique students. Visit shsu.edu/~fao_www to explore available department scholarships. The College of Sciences offers competitive teaching, research, and graduate assistantships. All students accepted in the graduate program in chemistry are supported by either teaching or research assistantships.