Bachelor of Science in Spatial Science
Arthur Temple College of Forestry and Agriculture
Stephen F. Austin State University

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The Spatial Science major is an outstanding choice for many reasons:

• Our graduates have an outstanding employment history, with excellent opportunities to go to work with a Bachelor of Science degree. Some careers of our alumni are highlighted starting on page 41.

• Graduate school options are excellent in this field. Be sure to consider these options, and, while you’re an undergraduate, ask faculty members about potential financial support for graduate school through research or teaching assistantships.

• Spatial Science faculty members at SFA have outstanding reputations in teaching, research and outreach. They have many projects you may have opportunities to become involved in, and some of these projects have potential for part-time or summer employment.

• We have cutting-edge software and hardware in this fast-evolving field of geospatial technologies, thanks to having faculty and GIS staff who not only maintain their training, but who ensure we are up to date on the latest changes in the future of the profession.

Finally, I strongly encourage you to become involved in student organizations that are directly affiliated with our College, including the Student Association of Spatial Scientists and other organizations, as highlighted starting on page 31. The phrase “It’s not what you know, but who you know” should be re-stated as “It’s not what you know, but who knows you.” Let fellow students, our faculty, and our professional staff get to know you by being active in student organizations.

The faculty and I look forward to working with you during your student career at SFA, and we hope this Curriculum Guide will help keep you oriented toward the goal of graduation. I look forward to shaking your hand as you walk across the stage to receive your Bachelor of Science degree, and I hope you’ll come to see me if I can help you before or after graduation.

Congratulations on your choice of an outstanding major!

Dr. Hans Williams, Interim Dean
Arthur Temple College of Forestry and Agriculture
University Mission Statement:
Stephen F. Austin State University is a comprehensive institution dedicated to excellence in teaching, research, scholarship, creative work, and service. Through the personal attention of our faculty and staff, we engage our students in a learner-centered environment and offer opportunities to prepare for the challenges of living in the global community.

College Mission Statement:
The Arthur Temple College of Forestry and Agriculture will:
• maintain excellence in teaching, research and outreach;
• enhance the health and vitality of the environment through sustainable management, conservation, and protection of our forests and natural resources; and
• enhance the production and economic viability of agricultural commodities.
The mission of the Arthur Temple College of Forestry and Agriculture is to:

- Maintain excellence in teaching, research and outreach;
- Enhance the health and vitality of the environment through sustainable management, conservation, and protection of forests and natural resources; and
- Enhance the production and economic viability of agricultural commodities.
### General Education Requirements

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ENG 131 and 132</td>
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<tr>
<td>ENG 273 or BCM 247</td>
<td>3</td>
</tr>
<tr>
<td>COM 111, 170 or COM 215</td>
<td>3</td>
</tr>
<tr>
<td>ENV 110</td>
<td>3</td>
</tr>
<tr>
<td>AST 105, PHY 101 or GOL 131</td>
<td>3</td>
</tr>
<tr>
<td>MTH 220</td>
<td>3</td>
</tr>
<tr>
<td>HIS 133</td>
<td>3</td>
</tr>
<tr>
<td>HIS 134</td>
<td>3</td>
</tr>
<tr>
<td>PSC 141</td>
<td>3</td>
</tr>
<tr>
<td>PSC 142</td>
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</tr>
<tr>
<td>ANT 231, ECO 231, 232, GEO 131, PSY 133, or SOC 137</td>
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</tr>
<tr>
<td>ART 280, 281, 282, MUS 140, MHL 245, THR 161, 370, DAN 140, or 141</td>
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<td>PHI 223</td>
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</table>

**REQUIRED (42)**

### Surveying Study Track

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>AST 105L, PHY 101L or GOL 131L</td>
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<tr>
<td>FOR 219</td>
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</tr>
<tr>
<td>FOR 423</td>
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<tr>
<td>BLW 366</td>
<td>3</td>
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<tr>
<td>BLW 468</td>
<td>3</td>
</tr>
<tr>
<td>HRT 325</td>
<td>3</td>
</tr>
<tr>
<td>HRT 326</td>
<td>3</td>
</tr>
<tr>
<td>GEO 315</td>
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</tr>
<tr>
<td>FIN 265</td>
<td>3</td>
</tr>
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</table>

**Suggested minors (24):**
- Forestry
- Environmental Science
- Geology
- Horticulture
- Agriculture
- Agronomy
- Biology
- Business
- Criminal Justice
- Approved Electives (11)

**REQUIRED (36)**

### Natural Resources Study Track

<table>
<thead>
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<th>Course</th>
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</thead>
<tbody>
<tr>
<td>MTH 133</td>
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<td>MTH 138</td>
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<td>3</td>
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<tr>
<td>GIS 390</td>
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<td>FOR 223</td>
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**REQUIRED (42)**

### Major Requirements

<table>
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</tr>
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<td>FOR 443</td>
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</table>

**REQUIRED (42)**

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**NOTE:** It is the student’s responsibility to complete the degree requirements as specified. A Final Graduation Plan must be filed in the Dean’s Office during the semester preceding the student’s final semester at SFA.

**A minimum grade of “C” is required in ENG 131 and ENG 132 and for each course in the spatial science core.**

(##): Number of credit hours per course.
# Course Offering Chronology

## Spatial Science

### SPATIAL SCIENCE CORE REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE #</th>
<th>COURSE TITLE</th>
<th>SEMESTER(S) OFFERED</th>
<th>PREREQUISITES</th>
<th>INSTRUCTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 133</td>
<td>Plane Trigonometry</td>
<td>fall, spring, summer I</td>
<td>MTH 099/138 or Test Scores</td>
<td>Math Professor</td>
</tr>
<tr>
<td>MTH 138</td>
<td>College Algebra</td>
<td>any semester</td>
<td>MTH 099 or Test Scores</td>
<td>Math Professor</td>
</tr>
<tr>
<td>GIS 201</td>
<td>Introduction to GIS</td>
<td>fall</td>
<td>none</td>
<td>Zhang</td>
</tr>
<tr>
<td>GIS 224</td>
<td>Introduction to Spatial Science</td>
<td>fall and spring</td>
<td>MTH 143/138/233</td>
<td>TBA</td>
</tr>
<tr>
<td>GIS 301</td>
<td>GIS Applications</td>
<td>spring</td>
<td>GIS 201</td>
<td>Unger</td>
</tr>
<tr>
<td>GIS 390</td>
<td>GIS in Natural Resources</td>
<td>fall and spring</td>
<td>GIS 224</td>
<td>Hung</td>
</tr>
<tr>
<td>GIS 395</td>
<td>GIS Database Management</td>
<td>fall</td>
<td>GIS 301</td>
<td>McWhorter</td>
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<tr>
<td>GIS 400</td>
<td>GIS Programming</td>
<td>spring</td>
<td>GIS 301</td>
<td>Zhang</td>
</tr>
<tr>
<td>GIS 405</td>
<td>Remote Sensing Applications</td>
<td>fall</td>
<td>GIS 201/224 &amp; GIS 301/390</td>
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<tr>
<td>GIS 410</td>
<td>Landscape Modeling</td>
<td>spring</td>
<td>GIS 201/224 &amp; GIS 301/390</td>
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<tr>
<td>GIS 415</td>
<td>Spatial Analysis</td>
<td>spring</td>
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<tr>
<td>GIS 420</td>
<td>Ecological Planning</td>
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<td>FOR 223</td>
<td>Surveying and Mapping</td>
<td>spring</td>
<td>MTH 138/143</td>
<td>Zhang</td>
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<tr>
<td>FOR 443</td>
<td>Weather &amp; Climate</td>
<td>fall</td>
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### SURVEYING EMPHASIS COURSES

<table>
<thead>
<tr>
<th>COURSE #</th>
<th>COURSE TITLE</th>
<th>SEMESTER(S) OFFERED</th>
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<th>INSTRUCTOR</th>
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<tr>
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<td>Dendrology</td>
<td>fall and spring</td>
<td>BIO 131 or instructor permit</td>
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<td>FOR 423</td>
<td>Advanced Surveying</td>
<td>spring</td>
<td>none</td>
<td>TBA</td>
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<tr>
<td>FIN 265</td>
<td>Real Estate Principles</td>
<td>spring</td>
<td>none</td>
<td>Brice</td>
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<td>BLW 366</td>
<td>Real Estate Law</td>
<td>spring</td>
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<td>BLW 468</td>
<td>Oil &amp; Gas Law</td>
<td>fall</td>
<td>JR or SR classification</td>
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<tr>
<td>HRT 325</td>
<td>Design Application Software I</td>
<td>fall, spring, &amp; summer I</td>
<td>JR or SR classification</td>
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<tr>
<td>HRT 326</td>
<td>Design Application Software II</td>
<td>fall, spring, &amp; summer II</td>
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<td>GEO Professor</td>
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Freshman and Sophomore Years
MTH 133
Plane Trigonometry

Plane Trigonometry is required for all spatial science majors.
• Topics cover trigonometric functions of angles, radian measure, fundamental identities, polar coordinates, inverse trigonometric functions, complex numbers, and addition, product, and half angle formulas.

MTH 138
College Algebra

College Algebra is required for all spatial science majors.
• Topics include mathematical models, solving equations, and creating, interpreting, and graphing functions.
• Particular focus is given to polynomial, exponential, and logarithmic functions.
GIS 201
Introduction to GIS

Introduction to GIS is a part of the core coursework for all spatial science majors.
• Course provides an overview of computer-based GIS concepts and components.
• Introduces GIS as a tool and methodological approach to visualize and spatially analyze social-economic, natural, and cultural phenomena and patterns.
• Topics include spatial and non-spatial attributes, spatial data manipulation and analysis, and map design.
• This course consists of lecture and lab.

FOR 219
Dendrology

Dendrology is required for spatial science majors with a surveying emphasis.
• In dendrology, students learn to identify common trees of East Texas and are introduced to tree species from around the world.
• This course is divided into lecture and lab.
• In lecture, students learn the taxonomy, morphology, and diversity of tree species.
• In lab the focus is on field identification. Students use leaves, bark, twigs, fruits, flowers, and habitat to identify trees while also learning interesting facts and wildlife values for approximately 180 East Texas tree species. They also learn common non-native urban and invasive tree species found in Texas, as well as some of the challenges and problems these species present to land managers.
• Students research tree species from other parts of North America by preparing and delivering a group presentation to their peers.
• Upon completion of this course, students know how to use a variety of online and print resources to identify almost any woody plant species and possess knowledge of East Texas plants.
FOR 223
Surveying & Mapping

Surveying and Mapping is part of the core coursework for all spatial science majors.
- This course is designed to introduce students to the principles and methods of land surveying and associated map production techniques.
- Elementary plane surveying procedures will be emphasized in this curriculum; however, Geodetic Principles will also be incorporated into the discussion of the Global Positioning System.
- The course includes proven field procedures for data collection in the field, the analysis of the data collected, and the final product and conclusion of the analyzed data.
- Students will develop a working knowledge of field procedures, instrument use, field data, reduction, map making, and accuracies of their work as the course progresses.

GIS 224
Introduction to Spatial Science

Introduction to Spatial Science is required for all spatial science majors.
- Students gain the ability to effectively use aerial photography, satellite imagery, global positioning systems (GPS), and geographic information systems (GIS) software.
- Students attend both lecture and lab.
- In lecture, GIS is emphasized as an important technological tool that ties critical information to a location in order to understand spatial relationships.
- In lab, students begin by using traditional tools, such as stereoscopes, to analyze and interpret aerial photography as well as color and color-infrared images. Students transition to using GPS units and the most up-to-date versions of computer software, such as ArcMap and ERDAS, along with the latest satellite imagery.
- The course concludes with a final project involving the creation of a map that solves a problem related to natural resource management.
Junior and Senior Years
GIS 301
GIS Applications

GIS Applications is part of the core coursework for all spatial science majors.
• This course provides an advanced overview of GIS as a tool and methodological approach to spatially analyze natural resources and social, economic, and cultural activities.
• It explores the use of GIS as an enabling technology in a range of disciplinary and application areas.

• Both theoretical and applied realms of GIS are emphasized in this course.
• Topics include vector analysis, raster analysis, geostatistical analysis, geocoding, geodatabase, and civil application (urban, health, marketing, and homeland security).

GEO 315
Cartography

Cartography is required for spatial science majors with a surveying emphasis.
• The course comprises the principle and theory of basic map design, layout, and communication.
• Students focus on producing map products in both digital and paper format depicting real-world spatial relationships.
HRT 325
Design Application Software I

Design Application Software I is required for spatial science majors with a surveying emphasis.
- Design Application Software I introduces students to computer assisted design (CAD) software.
- This course teaches 2-D drawing in Auto-CAD Architectural Desktop 2012.
- At the end of this course, students will be able to set up drawings, produce AutoCAD drawings, save and retrieve files, modify drawings, place text in drawings, and utilize layers.

HRT 326
Design Application Software II

Design Application Software II is a required course for spatial science majors with a surveying emphasis.
- This course focuses on utilizing building information modeling (BIM) technology for residential construction.
- Students will learn to use Revit Architecture 2012 to do 3-D modeling.
BLW 366
Real Estate Law

Real Estate Law is required for spatial science majors with a surveying emphasis.
• Real Estate Law covers concepts such as estate in land contracts, voluntary and involuntary conveyances, real estate description, liens, methods of title assurance, recording procedures, landlord-tenant law, agency law, and licensure requirements for real estate professionals.
• Emphasis on Texas Real Estate Law concepts.

BLW 468
Oil & Gas Law

Oil & Gas Law is required for spatial science majors with a surveying study emphasis.
• Oil and Gas Law covers the law associated with mineral rights and investments from a legal and participatory perspective.
• Upon completion of this course, students will be familiar with terms and practices affecting oil and gas law, understand the legal principles of oil and gas law as covered in the course, will be familiar with the legal and managerial terms, and realize the types of interests in oil and gas ownership.
GIS 390
GIS in Natural Resources

GIS in Natural Resources is a required course for all spatial science majors.
• This class outlines the principles of GIS and is designed to provide basic knowledge of GIS theory and application.
• Issues of data acquisition and the use of GIS for real world applications are emphasized.
• Students learn basic concepts and principles of GIS and apply spatial analytical tools to address questions and solve problems in natural resources.
• Students will conduct a project based on a scenario of their interest using GIS to better manage natural resources.
• Upon completion of this course, students demonstrate competency in the fundamentals of GIS in natural resource management.

GIS 395
GIS Database Management

GIS Database Management is required for all spatial science majors.
• Database management systems play an important role in domains that involve large and complex data with spatial references.
• This course introduces the concepts and principles of GIS database planning, design, implementation, and administration.
• Upon completion of this course, students will gain basic knowledge of Relational Database Management Systems (RDBMS), develop a fundamental knowledge of spatial database systems, and will be familiar with spatial database models, query, database architectures, and database technology.
GIS 400
GIS Programming

GIS Programming is required for all spatial science majors.
• This course is designed to introduce students to the basic structure and capabilities of object-oriented programming (OOP) in a GIS environment.
• This course introduces students to OOPs, Python, and ArcObjects.
• On completion of this course, students are expected to be able to: understand software engineering concepts as well as good programming methods and practices, use Python to automate data management, process, analysis, and visualization, and understand ArcObjects.
• The goal of the course is to help students not only be a GIS user, but also to be a GIS programmer.

GIS 405
Remote Sensing Applications

Remote Sensing Applications is a required course for all spatial science majors.
• In this course, students learn analysis of remote sensing application techniques applied to satellite and other non-photographic data involved with mapping, monitoring, and management of resources.
• Techniques involved with enhancement and analysis for both visual and digital applications will be explored.
• Students will learn how to map, monitor, and manage natural resources in a production-oriented environment using contrast enhancement techniques, filter enhancement techniques, mathematical ratios, image merging, change-detection algorithms, spatial modeling, thermal data, topographic analysis, and spatial data conversion.
• Each student will produce four maps or poster presentations depicting the application of an appropriate digital image processing technique in a natural resource application.
GIS 410
Landscape Modeling

Landscape Modeling is required for all spatial science majors.
• The course models natural resource ecosystems using geospatial techniques in natural resources.
• During the course, students will review basic concepts of landscape modeling and use these concepts and techniques in the landscape modeling of geospatial management. Methods used include ArcGIS software including ArcGlobe and ArcScene, and digital elevation data.
• Students integrate ArcGlobe and ArcScene with field and laboratory developed data.

GIS 415
Spatial Analysis

Spatial Analysis is part of the required coursework for spatial science majors.
• This course is intended to acquaint students with the most current analysis techniques used for the identification and description of spatial patterns.
• Upon completion of the course, students will be familiar with the concepts and application of basic analyses used in spatially referenced data, be able to recognize and implement appropriate methodology and analysis to address research questions with a spatial component, and understand the scientific method as applied to scientific research in spatial sciences, including problem formulation, data collection, and data analyses.
Ecological Planning is the capstone course for spatial science majors.

- The course covers the application of geographic information systems for problem solving management of geospatial applications for natural and cultural resources.
- Formulation, calculation, writing, and implementation of multiple use of planning and geospatial management plans are a large part of the course.
- During the course, students will review advanced applied geospatial management, practice methods to measure natural resource measurements of applied geospatial management, and complete a professional paper utilizing applied geospatial management techniques.

Weather and Climate is a required course for all spatial science majors.

- This course is an introduction to the basic ideas of the atmosphere, climate, weather, climate and weather forecasting, and climate change.
- Students will develop competencies to access weather information via geospatial software and the internet.
Suggested Minors and Electives


Suggested Minors for Spatial Science Majors

Forestry

General forestry provides students with the opportunity to specialize in one of a variety of career fields including forest management, range management, and urban forestry. A student may earn a minor in any of the specialized fields of forestry by completing a minimum of 20 semester hours. At least nine semester hours must be at the advanced (300-400) level.

Environmental Science

Environmental science is concerned with the physical, chemical, and biological conditions of the environment and addressing environmental problems. A minor in environmental science requires completion of ENV 110 plus 15 additional semester hours of environmental courses. At least six semester hours must be at the advanced (300-400) level.

Horticulture

Horticulture is the science, business, and art of growing and marketing fruits, vegetables, flowers, and ornamental plants. Horticulture includes site planning and preparation, seed and vegetative propagation, and plant growth and development associated with a wide diversity of crops for nutrition, beauty, and utility. A minor in horticulture requires at least 18 semester hours.

Geology

A career in geology provides students with an understanding of the methods of science and the fundamentals of Earth science as they relate to the physical environment and our dependence on Earth’s resources. A minor in geology consists of six courses of a minimum of 18 semester hours, of which at least six hours must be advanced (300-400) level. Students at SFA plan their minor programs in consultation with a geology advisor.

Biology

Biology prepares students for a fascinating future in conservation, ecology, health science, genetic engineering, or any of a multitude of interesting careers open to life scientists. A biology minor may be earned by taking 20-23 hours of biology. All those seeking a minor must successfully complete BIO 130, 131, and 133. The minor may be completed by taking three additional advanced biology courses.

Geography

Geography seeks to define and study physical and human patterns of the earth. Geography examines the relationships between them, the association of features giving personality or character to individual places or regions, and the meaning to humans of the similarities and differences of places on the earth. This minor requires 18 semester hours, of which at least nine must be advanced (300-400) level.
Agribusiness

A career in agribusiness involves the manufacturing and distribution of agricultural supplies, production operations on the farm, and the storage, processing, and distribution of farm commodities. The study of agribusiness focuses on integrating technical knowledge with economic theory to produce food and fiber for distribution to society. A minor in agribusiness requires at least 18 semester hours.

Agricultural Development

Agricultural development is a course of study designed to prepare students for a career in teaching, extension, or with agricultural service agencies whose purpose is to disseminate information related to the industry of agriculture. Special emphasis is placed on communication skills and effective teaching strategies. A minor in agricultural development requires at least 18 semester hours.

Ag Engineering Technology

Agricultural engineering technology is a course of study designed to prepare students for a career in the management of agricultural systems, including the design and marketing of agricultural machinery, agricultural structures, and agricultural environments. A minor in agricultural engineering technology requires at least 18 semester hours.

Animal Science

A career in animal science provides exciting and challenging opportunities for students desiring to pursue careers in animal production, animal health or health services, feed formulation and manufacturing, processing, and the marketing of animals and animal products. A minor in animal science requires at least 18 semester hours.

Business

Choices for a minor from the Nelson Rusche College of Business include administrative law, business communication, general business, and business technology applications. A minor in business requires 18-21 semester hours.

Criminal Justice

The criminal justice program is designed to prepare students for a career in justice administration, a field which includes, but is not limited to, law enforcement, corrections (probation, prison, and parole), legal assisting, court administration, and juvenile justice. A minor in criminal justice requires 18 semester hours.

... and many others.
Electives

GIS 411
Emergency Management GIS

- In this course, students will learn incident response protocols, evaluation and transformation of critical infrastructure data sets, and post event mitigation using geospatial techniques.

GIS 425
Mobile and Field GIS

- This course overviews GIS data management with a focus on building geodatabase and field mapping and inventory using mobile GPS/GIS devices.
- Students work on projects related to GIS data collection and processing using GIS/GPS.

GIS 460
GIS Internship

- This course explores the application of geographic informational systems and/or global positioning systems in an operational setting under the supervision of an approved company/organization.
- Must be arranged in advance and approved by the dean’s office.
- May be repeated for a maximum of 6 credit hours.

GIS 463
Special Problems

- Individual study in the area of GIS, GPS, or other areas of spatial science.
- Must be arranged in advance and approved by the dean’s office.
- May be repeated for a maximum of 6 credit hours.

GIS 464
Contemporary Topics in Geospatial Science

- Classes conducted on current topics in spatial science.
- May be repeated for a maximum of 9 credit hours.
Student organizations are the best way to get involved and show your pride at the Arthur Temple College of Forestry and Agriculture. There are organizations for any professional interest at our College, and even some for those who want to show their school spirit. Student organizations are extremely involved with numerous volunteer projects in the community and at SFA. Students also make lasting friendships and professional contacts through our organizations. The benefits just can’t be beat!
Student Association of Spatial Scientists

Student Association of Spatial Scientists (SASS) is an organization that focuses on advancing the knowledge of SFA students who are interested in spatial science. Its goal is to promote awareness of the academic program of spatial science at Arthur Temple College of Forestry and Agriculture as well as its related technologies and career opportunities.

The organization also offers social activities and events that provide opportunities for the members to gain leadership skills and professional development. SASS welcomes students from all disciplines across campus. The organization invites guest speakers from a variety of professions to inform students of the current status of spatial technologies and provide advice for their future careers.

Members are also available to assist students with GIS tasks and provide tips and tricks on software applications. Trips to off-campus meetings are also arranged so that the members have opportunities to interact with professionals in the spatial science field. Spatial science students are encouraged to get involved with SASS and make it home at SFA.

Besides regular meetings, SASS helps organize the annual GIS Day event. On the third Wednesday of November each year, the university celebrates GIS Day through a series of presentations to showcase the use of GIS, explore the benefits of GIS, and to nurture our GIS community. SASS members have been integral to this event, and we hope you can join us. Dr. I-Kuai Hung is the advisor (hungi@sfasu.edu).
Student Chapter of the Association for Fire Ecology

The Student Chapter of the Association for Fire Ecology exists to provide students with hands-on experience with prescribed burning and opportunities to work with professionals in the field.

Student members of SAFE have the opportunity to become Red Card Certified. This means that they receive the training in fire behavior, safety, equipment, radio communications, and chain of command in the U.S. Forest Service and other federal land management agencies needed to successfully participate in a prescribed burn. Students help burn in the spring and have experience working with a government agency.

SAFE volunteers within the community at many festivals and other events to provide outreach and education about the importance of fire safety and the role of fire in many ecosystems. One of their accomplishments was making the SFA campus a Firewise Community, which is a national effort to protect people and property from the risk of wildfires. Dr. Brian Oswald (boswald@sfasu.edu) is the advisor.

Student Society of Arboriculture

The Student Society of Arboriculture serves as a link between professionals in the tree care and “green” industries and students. SSA is comprised of both forestry and horticulture students.

Members of SSA stay current on information and trends in the commercial tree care industry, have membership in the International Society of Arboriculture, have connections to employers across the nation, and have access to internships that boost their resume and job related skills.

SSA volunteers across the SFA campus and the local community. Their newest project is to conduct and coordinate the “Adopt-A-Tree Program” on the SFA campus. Adopt-A-Tree is an urban shade tree program designed to plant new trees in urban areas and maintain existing shade trees. SSA also attends the Texas Tree Conference every year, which is hosted by the Texas Chapter of the International Society of Arboriculture. At the conference, students have the ability to network with professionals in their field and learn the latest tree care and urban forestry news and information. Membership in SSA allows students to not only get a leg up in the arboriculture industry, but also create lasting connections to fellow students. Dr. Hans Williams (hwilliams@sfasu.edu) is the advisor.
The SFA Student Chapter of the Society of American Foresters functions to connect students to professional chapters of SAF. Members network with professionals, volunteer for various organizations, and travel the U.S. to enhance their forestry knowledge.

SAF is extensively involved in the community through volunteer work. One of their most successful ongoing efforts is the Tree Campus USA project. SAF received the Program of the Year award as well as the President’s Volunteer Service Award for their hard work. SAF also volunteers with organizations like the Texas Forest Service and the National Wild Turkey Federation.

Every fall, students in SAF attend the National Convention. They compete with other forestry students from all over the nation in the Quiz Bowl and attend job fairs and technical sessions. In the spring, students attend the SAF State Chapter Meeting where they run a silent auction and meet with professional foresters working throughout Texas. Members also have the ability to apply for the Certified Forester program as well as other certification and education programs. Dr. Pat Stephens-Williams (stephensp@sfasu.edu) is the advisor.

The SFA Student Chapter of The Wildlife Society exposes students to sound stewardship methods of wildlife resources and the environment, allows students to take an active role in preventing human-induced environmental degradation, increases awareness and appreciation of wildlife values, and seeks the highest standards in all activities of the wildlife profession.

Students volunteer at events to enhance their knowledge in wildlife management and public outreach. Some of the events they volunteer for are the JAKES (Juniors Acquiring Knowledge, Ethics and Sportsmanship) event and Wheelin’ Sportsmen event, both held by the National Wild Turkey Federation. The Wildlife Society also volunteers at the fund-raising banquet for Safari Club International and at check stations for the U.S. Forest Service.

In the spring, students attend the Southeastern Wildlife Conclave to compete against different wildlife programs from the southeastern U. S. Students also attend the annual meeting for the Texas Chapter of The Wildlife Society to see technical presentations, compete in the quiz bowl, and make professional contacts. Dr. Roger Masse (masserj@sfasu.edu) is the advisor.
SFA Student Chapter
Ducks Unlimited

The SFA Student Chapter of Ducks Unlimited is a professional and social organization that brings together students who are interested in hunting and conservation. Student members gain field experience and meet professional contacts from many agencies such as the Texas Parks and Wildlife Department, U.S. Fish and Wildlife Service, and many private entities.

Ducks Unlimited has many volunteer opportunities throughout the academic year. One of these is a visit to the Alazan Bayou Wildlife Management Area where students build water control structures to enhance wildlife habitat. They also participate in the Greater White-fronted Goose Survey, build wood duck nest boxes on North Toledo Bend, and help run check stations during duck season.

Each fall semester, Ducks Unlimited holds a Waterfowl Hunter’s Party, a fundraising activity that members describe as a “duck hunter’s dream.” In the spring semester a banquet is held to highlight student accomplishments and conservation activities. Drs. Roger Masse (masserj@sfasu.edu) and Chris Comer (comerce@sfasu.edu) are the advisors.

Sylvans Forestry Club

Sylvans Forestry Club is a social and service organization at the Arthur Temple College of Forestry and Agriculture. Sylvans is the face of forestry at SFA. They volunteer at numerous community events, participate in spirit programs at SFA, and place every year at the Association of Southern Forestry Clubs Conclave event.

Sylvans have a close relationship with the Texas Forestry Museum and volunteer at many of their community and fundraising events. Some of these include the Gala Dinner, Texas Forest Festival, and Lumberjack Challenge. Sylvans also participate in spirit activities at SFA. One of the biggest is Homecoming, when they hold their annual Lumberjack Day and build a float for the Homecoming parade.

The Sylvans’ biggest event is the ASFC Conclave, where they compete against all southern division forestry schools in events such as the men’s and women’s crosscut and bow saw, pole climb, birling, axe and knife throw, wildlife identification, timber estimation, compass and pacing, and many others. They have placed in the top three every year for the last 12 years. As a forestry student, Sylvans is one of the best ways to support SFA and take great pride in being a Lumberjack. Dr. Jeremy Stovall is the advisor (stovalljp@sfasu.edu).
Student Chapter of the National Association for Interpretation

The Student Chapter of the National Association for Interpretation aims to connect students with professionals and hone their skills in environmental, cultural, and historical interpretation. NAI is dedicated to providing members with opportunities to develop communication and leadership skills.

In the fall, members attend the NAI National Convention, and in the spring, attend the multi-state Region 6 Conference. At these conventions, members attend training seminars where they gain skills important to recreation management. Students network with interpretation professionals from around the United States.

NAI is involved with volunteer activities to better the community, but also to provide members with valuable hands-on interpretation experience. In December, members help put on the Dickens Christmas event at Millard’s Crossing Historical Village.

Interpretation allows members to teach others about resources, which is a valuable skill for all forestry majors. NAI is open to all majors. Dr. Shelby Laird (lairdsg@sfasu.edu) is the advisor.

National Association of Environmental Professionals

The National Association of Environmental Professionals is a multi-disciplinary association for professionals dedicated to the advancement of environmental professions. The organization serves as a forum for environmental planning, research and management, as well as a network of professional contacts and resources for career development. NAEP is a strong proponent of ethics and the highest standards of practice in environmental professions.

SFA’s chapter of the NAEP hosts a yearly symposium, which addresses current environmental issues such as water quality and availability and invasive species. These forums are dedicated to educating the public on pressing environmental issues and bring together an array of experts to discuss research and potential solutions to the problems that effect the global community.

Members take time to enjoy the outdoors through social events such as camping and kayak trips. With NAEP membership comes opportunities for outreach, professional development, professional networking, as well as lasting friendships. Dr. Kenneth Farrish (kfarrish@sfasu.edu) is the advisor.
Ag Tech Club
The Ag Tech Club is open to anyone interested in agricultural mechanics and machinery. Meetings are every Wednesday at noon in the machine shop. Main events include the National Agricultural Mechanics Career Development Event in Indianapolis, IN, every fall. In the spring, the club participates in the Tri-County Tractor Contest and hosts career development events for high school students. The advisor is Dr. Craig Morton (mortoncraig@sfasu.edu).

Alpha Gamma Rho
The purpose of Alpha Gamma Rho is to “make better men.” A 2.0 GPA is required, and you must be enrolled in at least six hours at SFA. We have programs to help the March of Dimes, Women’s Shelter and Nacogdoches Police Department. The advisor is Dr. John Mehaffey (mehaffeyjm@sfasu.edu).

Collegiate FFA
The mission of the Collegiate Future Farmers of America is to make a positive difference in the lives of students by developing their potential for premier leadership, cooperation and citizenship, personal growth, and career success through agricultural education. The advisor is Dr. Dale Perritt (dperritt@sfasu.edu).

Delta Tau Alpha
DTA is a national agricultural honor society that recognizes students for superior academic performance and dedication to the prosperity, health and well-being of the agricultural industry. The advisor is Dr. Leland Thompson (lthompson@sfasu.edu).

Ducks Unlimited
The purpose of the SFA Student Chapter of Ducks Unlimited is to inform students about North American wetlands and the many important ways each person can help in their conservation, restoration and protection. Dr. Chris Comer (comerce@sfasu.edu) is the advisor.

Horticulture Club
The Horticulture Club is known for going on great trips, visiting exciting places and learning the tips and tricks of 21st century horticulture. The club meets once a week to help in the SFA Mast Arboretum in the propagation of plants for the Arboretum and Horticulture Club plant sales. The SFA Horticulture Club participates in the annual J. Benton Storey Undergraduate Student Horticulture Judging Contest. The advisor is Dr. Jared Barnes (barnesj@sfasu.edu).

Pre-Veterinary Medical Organization
The Pre-Veterinary Medical Organization is a professional organization whose purpose is to stimulate student interest in veterinary medicine, familiarize students with the expectations associated with pre-veterinary and veterinary education and the veterinary profession, and to build strong friendships among pre-vet students. Dr. Joey Bray is the advisor (jbray@sfasu.edu).

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Student Organizations, Arthur Temple College of Forestry and Agriculture, 2015

Arboriculture Club
Agri-Ambassadors
Agri-Ambassadors are a group of students that recruit for the Department of Agriculture throughout the year. They recruit at local events, national and statewide conventions, fairs and other exhibitions. To become a member of the organization, a student must maintain a 2.25 GPA and show an interest in exhibiting leadership skills through recruiting efforts. Applications are available in the main office of the Agriculture Building, Room 101 - return to Ms. Emily Payne in Ag 116A (epayne@sfasu.edu).

Agriculture Show Team
The SFA Show Team encourages and promotes interest in showing livestock and increasing relations with the livestock industry. The team supports the animal science program, the invitational livestock judging contest held on the campus each spring and the collegiate livestock judging team. The Show Team also works closely with local 4-H and FFA members to enhance their education and show skills. Dr. Erin Brown (browneg@sfasu.edu) is the advisor.

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An education at the Arthur Temple College of Forestry and Agriculture is very valuable, and we take pride in the fact that graduates from our programs are highly sought after by employers in the public and private sectors. According to the United States Department of Labor, the spatial science field is growing at an annual rate of almost 35%, with an increasing demand for accurate and widespread geographic information. Our alumni also feel such a sense of pride that they keep in touch with us after they have graduated. Here are some of their success stories!
Kevin Jackson

Kevin Jackson graduated with a Bachelor of Science in spatial science from SFA. He is now an Airborne Systems Operator at GeoDigital International. Jackson operates LIDAR equipment from a helicopter, and with the help of a pilot, collects information about the land below for clients.

While it is winter here in North America, he works in the Southern Hemisphere, specifically Australia. He credits his success to hard work, dedication, and the ATCOFA faculty. Jackson recommends that students looking for a similar career go through the spatial science program, take advantage of internship opportunities, and study abroad trips.

“In my line of work, travel is a necessity, and these experiences while you’re young will greatly improve your ability to adapt to your surroundings no matter what is thrown in front of you,” Jackson said.

He believes his internship at the Columbia Regional Geospatial Service Center and the study abroad trip to South America he took with Dr. Scognamillo and Dr. Kronrad led him to where he is today.

Jason Raines

Jason Raines obtained a Bachelor of Science in forestry in 2003 and a Master of Science in spatial science in 2008 from SFA. He is now the Forest Operations Manager at Acorn Forestry, where he coordinates crews, writes management plans, works on specialized mapping projects, inputs new jobs and client information into GIS, leads crews in the field, and meets with landowners and other foresters about job or management opportunities.

Raines’ job provides him with the opportunity to impact the world around him.

“My work has a direct effect on the sustainability and health of our forest resources in the western gulf region,” Raines said.

To do this, he uses GIS and GPS technology to plan and monitor each job. Raines suggests students find a job that excites them.

“I thoroughly enjoy my job and the people I work with, and even though my job may be physically and mentally grueling at times, I can’t see myself in a more enjoyable line of work.”

Charles Van Hoose

Charles Van Hoose graduated from SFA with a degree in Spatial Science and now works as a Senior GIS Analyst for Intrado. Van Hoose is responsible for coordinating different projects, staging multiple servers for software deployment, remote support, writing codes for software, testing and debugging software, and working on GIS data maintenance projects.

He enjoys his work because it allows him to make a difference.

“My work directly affects how first responders are dispatched to emergency situations, ultimately with the goal of saving lives,” Van Hoose said.

Technology plays a big role in Van Hoose’s work. He said it was the high-end technology that drew him to spatial science in college.

“The use of rapidly advancing technology allows GIS professionals to engage in complex analytical endeavors on the forefront of progress.”
Kyle Palmer

Kyle Palmer graduated with a Bachelor of Science in spatial science from SFA in 2012, and is now an HDS Scanning Technician with Stranger Surveying. Palmer creates solutions for clients through data collected with LiDAR. He uses technology like Trimble GPS equipment, Leica Cyclone point cloud software, and the Leica HDS Scanner.

“My work is the next era of visualizing spatial environments. As computing power accelerates and collection and processing technology becomes more sophisticated, 3-D usage will be more prevalent,” Palmer said.

To those pursuing a career in spatial science, Palmer suggests that students minor or double major in computer science.

“Companies who are hiring for the best jobs want you to be skilled in database management first, programming second, and working with ArcGIS third,” Palmer said.

He has been learning more in these areas, and considers flexibility a necessary trait in this field.

Kathleen Seal

Kathleen Seal graduated from SFA with a bachelor’s degree in environmental science in 1999 and a master’s degree in forest recreation in 2008. Seal now teaches GIS, Community and Regional Planning, and World Geography at Texas State University and Texas Lutheran University, while she works on her doctorate in environmental geology at Texas State University.

“My dissertation is on the Appalachian Trail hiking experience so it is fascinating and captivating,” Seal said.

Doug Kjellander

Doug Kjellander graduated from SFA with a degree in spatial science. Today, he is a GIS Analyst for SAM, Inc., where he maps out projects for various companies and municipalities. To do this, he uses high end technology like ArcMap, AutoCAD, LiDAR, Microstation, and stereoscopy. Kjellander was first introduced to the field in college.

“I’ve always loved geography, so spatial science seemed like the right fit,” Kjellander said. “I took a couple of classes and have been in love with it ever since.”

KJELLANDER DUTCH 42
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