SYLLABUS
GIS 4320: Ecological Planning

Instructor: Dr. David L. Kulhavy, Laurence C. Walker Professor
Office: Forestry Building, Room 203F; 936 468-2141
Office Hours: 9-12 MW am and 4:30 pm to 5:00 pm MTW or By Appointment

Meeting Times: M 5:30-8:15, For.205, GIS labs; interaction will include weekly Zoom meetings and display of GIS material weekly via Zoom or email. There will be 30 minute blocks for each student to present their material each week for progress on their projects. An update via power point and/or visual presentations will be required for the projects. Work will take place in GIS labs or an area for building GIS products.

Course Description: 3 Credit Hours; Planning, establishment, protection, and management of natural resources using geospatial analysis

Course Objectives: Application of geographic information systems to solving management of geospatial applications for natural and cultural resources. Formulation, calculation, writing and implementation of multiple use geospatial management and planning plans. This is the capstone course in the geospatial major. At the graduate level, the course will concentrate on a poster, presentation and ArcGIS 10.6.1 database development of a hyperspatial analysis using Pictometry or 1 m resolution data.

Program Learning Outcomes: GIS 4320

The course shall meet the following BS Geospatial Science learning outcomes:
1. Demonstrate understanding and competency of Geospatial Science;
2. Demonstrate understanding and competency in the use of Geospatial Management in spatial analysis of natural resources;
3. Demonstrate understanding and competency in spatial analysis;
4. Demonstrate understanding and competency of geospatial analysis, geospatial measurements and geospatial modeling.
5. Demonstrate understanding and competency in oral and written communication skills.

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<th>B.S. Spatial Science Program Learning Outcomes</th>
<th>M.S. Program Supporting Spatial Science Requirements</th>
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<td>Proficiency Levels</td>
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<td>Course</td>
<td>PLO 1 Geospatial Competency</td>
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1. A – Advanced – course supports Program Learning Outcome by providing students with topic-specific information, concepts, applications, and lab activities that increase the students’ skills in making tactical implementation decisions relative to the expected outcomes.

**Student Learning Outcomes:** Basic competencies of geospatial management will be reviewed (PLO1). Concepts and techniques in the applied applications of geospatial management will be presented (PLO2). Methods of geospatial management and measurements of natural resources will be discussed (PLO3). Knowledge of applied geospatial management as the foundation for developing and implementing sound natural resource management will be emphasized throughout the course; this will be coupled with the use of Geographic Information Systems in natural resource planning (PLO4). Professional ethics as it relates to the practice of applied geospatial management will be discussed (PLO4). Oral and written laboratory reports will be assigned to improve communication skills (PLO5).

**Course Goal:** Advanced applied geospatial management will be reviewed (PLO1). Concepts and techniques in the application of geospatial management will be presented and applied. Methods to measure natural resource measurements of applied geospatial management will be utilized. Course goals include a professional paper utilizing applied geospatial management techniques.

**Required Readings As Assigned**

**General Course Policies:**

**Attendance:** Attendance is mandatory for lecture and laboratory. The student is responsible for making the instructor aware of an excused absence. Each unexcused absence will result in a final total point reduction of five percent. Refer to the SFASU Policy Manual on the SFASU web-site for more information.

**Assignments and Grades:** There are 500 points available in the course: 100-point journal, a workbook of sources and timeline, and weekly meeting updates on your project; a 150 point applied geospatial management plan with a poster, and a 150 point applied application booklet. A Power-point presentation of the applied geospatial application, 100 points.

**Preparation of Applied Geospatial Management Plan:** You will be expected to show competency in a natural resource plan for applied geospatial analysis. The plan for each will be presented in a power point and professional journal. A handout will be provided that describes the data provided and the expectations of the geospatial management plan. At the completion of the term, a professional paper needs to be produced. Topics include impact of Hurricane Harvey; application of the Anderson landcover analysis to Nacogdoches County over time; analysis of the Ag Pond for chemical and nutritional analysis; implementation of a tree planting program at
Stephen F. Austin State University; comparison of drought and full pool level at Lake Nacogdoches for fish habitat; change over time for La Nana Creek using ArcGIS 10.5.1, GoogleEarth Pro and Pictometry; measurements of land surface area from Pictometry, UAS and GoogleEarth compared to land measurements; using ArcGIS for land reclamation.

Other Policies:
Withheld Grades Semester Grades Policy (A-54)
A grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances and is done at the discretion of the instructor of record with the approval of the academic chair/director. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

Student Academic Dishonesty Policy (4.1)
Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism. Definition of Academic Dishonesty: Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit. Please read the complete policy at http://www.sfasu.edu/policies/student_academic_dishonesty.pdf

Course Grades Policy (5.5)
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average. Please read the complete policy at http://www.sfasu.edu/policies/5.5_course-grades.pdf

Academic Accommodation for Students with Disabilities Policy (6.1)
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the
accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/

**Responsible Use of Technology**
It is expected that all students will only use cell phones, PDAs, laptop computers, MP3 players and other technology outside of class time or when appropriate in class. Answering a cell phone, texting, listening to music or using a laptop computer for matters unrelated to the course may be grounds for dismissal from class or other penalties.

**Acceptable Student Behavior**
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy 10.4). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed. Please read the complete policy at http://www.sfasu.edu/policies/student-code-of-conduct_10.4.pdf

**Wearing of Face Masks**
Face Masks are mandatory in all buildings, laboratories, GIS facilities and outdoor laboratories during the time of COVID. Access to the classroom must include a face mask.