Ecological Modeling
BIO 6433

Instructor
Dr. Ben Skipper, Cavness 118A
Phone: 325-486-6622
Email: bskipper@angelo.edu
Office Hours: MW 11-1, T 8:30-11, R 2-5, or by appointment.

Required Materials:
No text, but handouts will be provided. Additionally, you will need a 4 – 8 Gb flash drive for saving your work.

Lecture:
TR 6:00 – 8:00 PM, Cavness 111 and 031

Course Description:
Use of analytical and modeling techniques within a geographic information systems (GIS) environment with focus on answering ecological questions. Topics covered to include, home range estimation, habitat suitability indices, spatial pattern analysis, species distribution modeling, and remote sensing. GIS users will move beyond map making to the applied aspects of GIS.

Learning Outcomes:
1. Students will gain knowledge about terminology and methodology related to GIS.
   - You will become proficient with the language of GIS and recognize which analytical tools are appropriate or inappropriate for a given dataset or situation.
2. Students will learn to apply analytical techniques within the GIS environment to answer ecological questions.
   - Using GIS, you will be able to answer questions related to habitat use, home range size, habitat suitability, and changes to species distributions.
3. Students will become skilled at finding, evaluating, and processing raw data from state and federal natural resource agencies to meet their own and employer’s data needs.
   - You will be able to search for, evaluate the quality of, and process raw data collected by others to meet your data needs.

Course Format:
This course will be a hybrid of lecture and computer lab, frequently alternating between traditional lectures and hands-on learning of software and analytical techniques. Blackboard will serve as a common repository for course materials; however exams and quizzes will be given in class.

Course Assessment:
We will have three exams (including the final) throughout the semester. Each exam will be worth 100 points. Additionally, we will have ten in class quizzes throughout the semester. Each quiz will be worth 10 points. There will be ten worksheet assigned throughout the semester to give you practice utilizing GIS. Each worksheet will be worth 10 points. There will be five assignments spaced throughout the course. Each assignment will be worth 25 points. Lastly, each student will independently complete a GIS based research project. As a part of this project students will present a 15-minute presentation to the class and submit a written report of their project. Details will be discussed in class.

Assessment Summary:

Exam 1: ..........................................................100 points
Exam 2: ..........................................................100 points
Exam 3 (Final Exam): .................................100 points
Quiz X 10 (10 points each): .........................100 points
Worksheet X 10 (10 points each): ...............100 points
Assignment X 5 (25 points each): ...............250 points
Student project.............................................100 points

Total............................................................850 points
Student Disability Services

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation. The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student’s responsibility to initiate such a request by contacting:

Ms. Dallas A. Swafford Director of Student Disability Services

- 325-942-2047
- dallas.swafford@angelo.edu
- Houston Harte University Center

Angelo State University is committed to the safety and security of all students. If you or someone you know experience sexual harassment, sexual assault, domestic or dating violence, stalking, or discrimination, you may contact ASU’s Title IX Coordinator:

Michelle Nicole Boone, J.D. Director of Title IX Compliance

- Michelle.boone@angelo.edu
- 325-486-6357
- Mayer Administration Building 204

Student Absence for Observance of Religious Holy Days

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day for more information.

Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information.

Student Conduct Policies

Academic Integrity
Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject to disciplinary action and possible expulsion from ASU.

**Academic Integrity**

**Plagiarism**

Plagiarism is a serious topic covered in ASU’s [Academic Integrity policy](#) in the Student Handbook. Plagiarism is the action or practice of taking someone else's work, idea, etc., and passing it off as one’s own. Plagiarism is literary theft. In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list. Papers are subject to be evaluated for originality via Turnitin. Resources to help you understand this policy better are available at the [ASU Writing Center](#).

**Copyright Policy**

Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

**General Policies Related to This Course**

All students are required to follow the policies and procedures presented in these documents:

- [Angelo State University Student Handbook](#)
- [Angelo State University Catalog](#)