

**Methods in Field Biology BSc 505
2012**

Instructor:

Dr. Jeff Kopachena, Rm 258

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Classes:

Lectures held in Rm. 136

Monday and Wednesday: 10:00 – 11:00

Thursday: 1:00 - 2:00

Textbooks:

None

Course Objectives:

- 1) To engage in some simple field techniques used in ecological and management studies to survey habitat and census plant and animal populations. This will provide an appreciation of the difficulty in obtaining precise and accurate data in field situations.
- 2). To apply the findings from field survey methods to literature on the subject.

SLO's

- 1) Students will know how to set up a small mammal trapping grid, collect and analyze data, and synthesize this data into a report
- 2) Students will know how to set up a drift fence array, collect and analyze data, and synthesize this data into a report
- 3) Students will know how to set up a plant transect, collect and analyze data, and synthesize this data into a report
- 4) Students will know how to collect GPS data, collect and analyze data, and synthesize this data into a report

Course Topics:

The course will be centered on a class project, namely a biological inventory of the TAMU-C Wetland. The entire class will act as a group, with each student organizing the collection of one of the four types of data listed below. Students will be responsible for sampling design, collection and trapping, and analyses of results. Every student is expected to participate and contribute to each activity. Each week each student will present a progress report on their particular study. At the end of the semester each student will present the entire class data in the form of a biological inventory with a written literature review.

Project: Biological Inventory of Tamu-C Wetland and Prairie Restoration Area.



1. Plants: Students will conduct a systematic survey of plants in the wetland and upland areas. This should include both aquatic and terrestrial plants, both on and off the levees. Suggested sampling method will be to use quadrats along transects.
2. Small Mammals: Students will conduct a survey of small mammals using Sherman live traps. Students will use a mark-recapture technique to determine population sizes and home ranges.
3. Herps/fish: Students will conduct a survey of reptiles, amphibians, and fish in the wetland area to include both aquatic and terrestrial species. Snakes will be surveyed by using drift fences and funnel traps. Amphibians will be surveyed by doing call surveys, kick nets, and active searching. Fish will be sampled using seine nets.
4. GIS map: Students will create a GIS map of the study area using ArcMap and GPS shapefiles collected in the field. The map will contain all the major features of the study area and will include all trapping grids, survey transects, and drift fence arrays.

Basic Equipment Needs.

1. Plants
 - a. Quadrats
 - b. flags
 - c. Tape measure
 - d. Large Ziploc bags
 - e. Plant presses
 - f. Blotters
 - g. Manila paper/white boxboard (11 x 17)
 - h. Plant key: <http://artemis.austincollege.edu/acad/bio/gdiggs/NCTXpdf.htm>
2. Herps/fish
 - a. 18" flashing (50' roll) (3)
 - b. Caulk guns (2)
 - c. Outdoor silicone caulk
 - d. flags
 - e. Snake tongs
 - f. Thick wire (for stakes)
 - g. Tin snips (2)
 - h. Wire cutters (2)
 - i. Spades
 - j. Seine nets
 - k. Buckets
 - l. Cover boards
 - m. Reptiles and amphibian books
 - i. <http://www.zo.utexas.edu/research/txherps/>
 - ii. Fish field guide
3. Small Mammals
 - a. Small mammal Sherman traps
 - b. Gloves

- c. Ear tags, punch
 - d. Peanut butter and oatmeal
 - e. Fire ant insecticide
 - f. Flags
 - g. Field guide
4. GIS Map
- a. ArcMap Software
 - b. Trimble XT GPS Units

Grading Scheme:

Participation	25%
Progress reports	25%
Final Report	50%

Progress Reports:

Progress reports will be presented orally in Rm. 136 on the Monday of each week. Each student will present to the class the results of the preceding week's work. Grading will be based on the thoroughness of the report and the productivity of the preceding week.

Final Report:

All students will be required to write their own final report. Duplicate reports will receive a grade of 0. The final report should follow typical scientific format, including an Abstract, Introduction, Methods, Results, Discussion. The introduction should include a literature review relevant to the topic. Similarly the discussion should refer to the literature on the subject. In most cases the discussion should address the questions: Are the organisms found in the wetland typical for this area? And, How do the populations sizes, densities, or occurrences differ from other studies? Keep the reports simple and succinct.

Obligatory Statements:

Plagiarism is a criminal activity. You must cite all sources of information. Copying of material, whether parts of sentences, whole sentences, paragraphs, or entire articles, will result in a score of zero for your assignment and can result in further disciplinary action.

Collusion: Is intentionally aiding or attempting to aid another in an act of scholastic dishonesty, including but not limited to, providing a paper or project to another student; providing an inappropriate level of assistance; communicating answers to a classmate during an examination; removing tests or answers from a test site, and allowing a classmate to copy answers.

Students with Disabilities:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation for their disabilities. If you have a disability requiring an accommodation, please contact:

Texas A&M University-Commerce
Gee Library, Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamu-commerce.edu

All student enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. See Student's Guide Handbook, Policies and Procedures, Conduct.

Students who are disruptive to class activities will be dropped from the class and may face further disciplinary action.