Instructor: Professor John E. Ubelaker
Office hours: by appointment;
Email: Ubelaker@mail.smu.edu

Required Resources: Textbook: Our Natural Environment workbook, which will be available to purchase for $30.00 upon arrival.

Mission Statement: This is a course surveying the biotic zones present in the southern Rockies especially in the vicinity of Taos. Its primary goal is to provide students with a basic understanding of life cycles and plant and animal diversity in relation to biotic and abiotic factors within these zones and how the methods and approaches of scientific inquiry and problem solving allow environmental concepts and analysis to shape our world.

Objective: The objective in this course is to provide students a basic understanding of the various factors influencing life zones in the southwest. In the course we will survey plant and animal diversity, emphasizing life histories from an evolutionary prospective and by using examples in northcentral New Mexico. Both lectures and field trips to the various ecological zones present around the Taos area will provide the necessary framework of biological concepts that the student will apply to the course material so prerequisite information is not necessary. This course meets the science requirement for non-science students in the University Curriculum.

Learning outcomes: Students will learn how to survey animal and plant diversity using traditional methods of field science. Collection of plants and animals along with field trips will allow students to analyze environments from above the tree line to desert zones. This course meets the science requirement for non-science students.

Specific Learning Objectives
1. To recognize that observations of the environment are the first step in the scientific process
2. To understand how the scientific process operates.
3. To experience life zones in the southwest
4. To understand the various abiotic factors that influence life zones
5. To distinguish between the various life zones in the southwest
6. To understand succession of vegetation in each life zone
7. To run a scientific experiment demonstrating the role of particular plants in controlling succession.
8. To differentiate between normal succession in an ecological zone and restrictive succession by invasive species.
9. To understand the life cycle of the climax vegetation in each zone.
10. To apply the knowledge of the methods of vegetational analysis in interpreting the success of plant establishment and growth in normal and altered ecosystems.

Measureable outcomes
1. Students will review the scientific methods and select observations to be tested. Students will look at the application of the scientific method to understanding the natural world.
2. Students will make observations of the natural world and will place them into the scientific method and will be able to determine how the process works.
3. Students will hike to and examine life zones in the southwest. The life zones of alpine, Canadian, transition, upper and lower Sonoran will be examined.
4. In each of the above listed zones students will examine the climax vegetation and will be able to explain the various abiotic factors that influence the establishment of that vegetation.
5. Students will examine damaged life zones and be able to predict the length of time the altered ecosystem will need to repair itself and the role of forestry techniques in allowing more rapid recovery.

**Student Learning outcomes:** Each student will demonstrate basic facility the above listed methods and approaches of scientific inquiry and problem solving and students will explain how the concepts of findings of the science in this course shape our world.

**Grading and Policy**
Your course grade will be based on Professionalism and the Examinations as follows:

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<tr>
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<th>Points</th>
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<tbody>
<tr>
<td>Professionalism</td>
<td>10</td>
</tr>
<tr>
<td>Midterm Examinations</td>
<td>100</td>
</tr>
<tr>
<td>Daily quizzes</td>
<td>50</td>
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<tr>
<td>Final Examination</td>
<td>100</td>
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Professionalism points + Midterm Examination + Quizzes + Final exam /260 total points = Final grade

Letter grades will be assigned according to the following scale: percentages

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>93-100</td>
<td>A</td>
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<tr>
<td>88-89</td>
<td>B+</td>
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<tr>
<td>80-82</td>
<td>B-</td>
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<tr>
<td>78-79</td>
<td>C+</td>
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**Study Skills:** As students you have the right to make a decision to work as little or as much as you like on each course. The following suggestions are made to guide your decision process.

1. I recommend that you spend at least two hours outside of the classroom for each hour of lecture. Before each lecture read the material from the workbook and be prepared to ask questions that can be answered in class. After each class review your lecture notes for an hour and reread the text.
2. Be on time for lecture and laboratory sessions. Take good notes and listen to the lecture. Some material on the exams will come from both the text and the lecture material. The quizzes will be given at the beginning of each class.

**Professionalism:**
Professionalism will be measured by the professor’s subjective assessment of your approach to the class and class work, industry and preparation before class, meaningful
oral participation during class, and punctual attendance. Extra credit is not available in this course.

**Examinations:**
Examinations may not be re-scheduled, distributed early, made up or turned in late.

The midterm Examinations will be distributed in class at the date and time designated for distribution and must be completed within the class period. The final examination is not cumulative. Questions may involve short answers.

**Policy**
Students requesting reasonable accommodation on any course component for learning differences or bonafide religious observance must contact the professor as detailed below. Only requests accompanied by the letter of documentation from the appropriate person in authority will be considered.

**Disability Accommodations:** Students needing academic accommodations for a disability must first register with Disability Accommodations & Success Strategies (DASS) to verify the disability and to establish eligibility for accommodations. You may call 214-768-1470 or visit [http://www.smu.edu/alac/dass](http://www.smu.edu/alac/dass) to begin the process. Once registered you should then schedule an appointment with Dr. Ubelaker to make the appropriate arrangements.

**Religious Observations:** Religiously observant students wishing to be absent of holidays that require missing class should notify Dr. Ubelaker in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence.

**The University Honor Code shall be strictly followed.** The Honor Code for SMU policies as described in the student handbook will be followed in this course. You will be required to sign and present to me an Honor Code statement and pledge prior to each exam and homework assignment. Any allegation of violation of academic integrity in the lecture or laboratory portions of this course will be reviewed in the Department and/or referred to the Honor Council.

**Calendar and Reading Assignments**
The calendar and assignments are subject to change at the Professor’s discretion. Particular topics and assignments may be added to or deleted from those listed below, and dates for class and topic discussion may be altered. A lecture and reading assignment will be provided on the first day of class. The lecture, laboratory and reading assignments will follow the textbook closely.
This is an intense experience in which you are in class (lecture and laboratory) most of the day. Lectures begin at 8:30 and last until 10:30. Laboratories begin at 11 and last until noon each day. On Friday and Saturdays we will have a field trip to a different location. In these locations the lecture material will be designed to help the student understand the geology, archaeology and human uses of the land. On these field trips we will leave after breakfast at 8 or 8:30, travel to the site in a van and spend the rest of the day hiking and lecturing. You will need to bring a notebook to take notes on these hikes.

I welcome you to this course; please attend the lectures and laboratories since material is discussed there that is not in the textbook. I ask that each of you make an appointment with me sometime during the term even if you are doing acceptable work. I enjoy getting to know each of the students in my classes. If you have difficulty with any part of the class please schedule an appointment with me early in the semester. Have a good semester and enjoy the wonderful environment of SMU in Taos.

**Tentative Schedule: Lecture, quizzes, 8:30 – 10:30 laboratory 11-12.**

Arrive May 14 in afternoon. Orientation at 6:30 after dinner and brief meeting outside cafeteria following orientation. Bring $30.00 for laboratory manual.

May
15  Lecture at 8:30 – 10:30 Nature of Science, Scientific method; Plato and Aristotle; Discorides, Ray and the development of herbals. Ray and plant pressing Lab 11-12. Algae/fungi
   6:30 lecture on Zones of the southwest, and three prominent trees. Meet outside the cafeteria.
16  Field trip to Pedernal, Ghost Ranch
17/18 Free days
19  Quiz Lab Linneaus and classification 11-12 –lichens/ mosses
20  Lecture contributions Cuvier, Buffon, Lamarck lab mosses,
21  Lecture Darwin and Evolution Lab Equisetum, horsetails, Ferns
22  Mid term exam
23  Field trip to Italionalis leave at 8:00
24-25 Free days
26  Gymnosperms lecture and lab
27. Angiosperms
28  Angiosperms
29  Field trip to Gorge, New Buffalo, Review after dinner
30 Final Exam