

**LECTURE SYLLABUS**  
**BIOL 4406 Principles of Ecology Spring 2019**

**Instructor:** Dr Sean P. Graham  
**Lectures:** MWF 10-10:50 WSB 107  
**Laboratory:** W 3-450 WSB 107  
**Office:** WSB 221

**Office Hours:** T-Th 9-11am Fr 11-12  
**Office phone:** 432-837-8084  
**Email:** sean.graham@sulross.edu

**Course Description:**

Ecology is the study of the interactions between organisms and their environment. This course will outline the complex interplay between abiotic and biotic factors which characterize the ecosphere. Using a field-based laboratory approach, this course will be an introduction into the field of ecology, and will ultimately invite students to begin "thinking like a mountain."

**Recommended Books/Checklists:**

1. *Ecology and Field Biology* (**NOT REQUIRED**).

**Exams & Grading:** The table below illustrated the grading for this course. I do not give comprehensive exams.

3 lecture exams @ 100 pts ea	300
Lab exams (3 @ 100 pts ea)	300
Field Notebook	50
<b>Total Credit</b>	<b>650 points</b>

A 90 — 100%    B 80 — 89%    C 70 — 79%    D 60 — 69%    F 0 — 59%

**Attendance** is mandatory. I do not post lectures on blackboard, so all material needed to do well in the exams will be provided during lectures and laboratory. **DO NOT MISS EXAMS or LABS** unless you have a documented, university-approved excuse (hospitalization, etc.), and I need to hear about this **BEFORE THE DAY OF THE EXAM**. Otherwise you're out of luck.

**Student Learning Outcomes (SLOs) for Biology:**

- 1) Demonstrate an understanding of evolution by natural selection.
- 2) Demonstrate an integration of environmental awareness into everyday modern life.
- 3) Demonstrate an understanding of how to incorporate molecular biology into the study of the whole organism.
- 4) Demonstrate utilization of various field techniques toward addressing scientific questions in the discipline.
- 5) Conduct basic laboratory experiments utilizing standard observational strategies.

**Student Learning Outcomes (SLOs) for Biology, MS:**

1. Understanding and implementation of scientific methodology
2. Utilization of field techniques toward addressing scientific questions\*
3. Be able to utilize statistics toward the analysis of data within the discipline
4. Be able to effectively disseminate scientific findings using both written and oral communication.

**Tentative schedule** (subject to change)

week of

**Week**

**Topic**

1

Introduction: Thinking like a mountain

Jan 23

Jan 25

1	Abiotic factors	Jan 28
2		Jan 30
2	Plant Adaptations	Feb 1
3	Animal Adaptations	Feb 4
3		Feb 6
4	Population Ecology	Feb 8
4		Feb 11
5		Feb 13
5	Biotic Factors: Mutualism	Feb 15
6	Competition	Feb 18
6	Predation	Feb 20 Feb 22
7	Herbivory	Feb 25 Feb 27
7	<b>First test Friday Mar 1</b>	
8	Community Ecology	Mar 4 Mar 6
8	Patterns of species richness and diversity	Mar 8 Mar 11
9	Stability, equilibrium, and non-equilibrium	Mar 13 Mar 15
10	Succession	
<b>Spring Break</b>	Spring Break Mar 18-22 No Classes	Mar 25
11	<b>Second test Friday 5 April</b>	Mar 27
11	Trophic structure	Apr 1 Apr 3
12		Apr 8 Apr 10
12		Apr 12
13	Energy Flow	Apr 15
13		Apr 17
14		<b>Apr 19 Good Friday</b>
14		Apr 22
15	Nutrient Cycles	Apr 24 Apr 26
15		May 1 May 3
16	Conservation	May 6 May 8
		May 8, last day of classes

**Final exam (not cumulative) Friday May 10  
10:15-12:15**

**Students with disabilities will be provided reasonable accommodations. If you would like to request such accommodations because of a physical, mental, or learning disability, please contact the ADA Coordinator for Program Accessibility at 837-8203, FH 112.**