

# ECOLOGY AND EVOLUTION (BIOL 3250 A,B,E) -- Fall Semester 2020

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Biol. Dept. 333-5759

Office Hours: M 2-4, other times by appointment (call or use MS Teams).

e-Texts: Smith, T.M., and R.L. Smith. 2015. Elements of ecology. 9<sup>th</sup> ed. Pearson Education, Inc. Hoboken, NJ.

Bergstrom, C.T., and L.A. Dugatkin. 2016. Evolution. 2<sup>nd</sup> ed. W.W. Norton and Co., NY

!!Students are responsible on exams for all information from lecture, handout, and readings presented in lecture or on BlazeView and e-mail (use ...@valdosta.edu account only)!!

Lecture: four 100-pt. lecture exams (some points may come from online eBook activity\*\*).

\*Tentative Exam Dates: Sep 18, Oct 16, Nov 13, Dec 10 (Thurs, 10:15 am, *ONLINE*)

Lab = ca. 33% of course grade from lab: writeups of field/laboratory exercises; including original investigations and computer simulations.

## LECTURE SCHEDULE

Week #	Topic	Chapters in: <b>Evolution (V)</b> , otherwise <b>Ecology</b>
1	Introduction to Ecology	<b>1</b>
1	History and Fundamentals of Evolutionary Theory	<b>V1,2</b>
2	The Nature of Variation	<b>Skim V6,9,10</b>
2-3	Species and Phylogenies	<b>V4,5,14</b>
3	"Evo-Devo"	<b>V13</b>
4-5	Population Genetics and the Mechanisms of Microevolution	<b>V7,8,3</b>
6-7	Physical and Physiological Ecology Conditions and Resources	<b>6,7</b> <b>2, Skim 3,4</b>
	Nutrient/Mineral Cycles Niche Concepts	<b>Skim 21,22</b> <b>Section 12.6</b>
8-9	Population Ecology: Demography, Dynamics, & Density-dependence	<b>8,9,11</b>
10-11	Reproductive Ecology & Life Histories	<b>10</b>
11-12	Interspecific Competition	<b>12,13</b>
13	Foraging Ecology, Predator-Prey	<b>14</b>
14	Community Structure & Dynamics, Trophic Cascades,	

**Tentative Computer Laboratory/Field Schedule****Assignment (pts.)**

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Week 1 -- Intro to Inland Coastal Plain Ecosystems. ( <b>***READ Ecol. Chapt 1; Skim Chpts. 20-25 for ideas***</b> )	Hypotheses	(10)
2 -- Phylogenetic Rules and Reconstruction	Assignment	(10)
3 -- Population Genetics Computer Simulations Scientific Writing	Scientific Paper	(15)
4 -- Transect sampling (field)		(5)
5 -- Computer Simulation (Darwinian Snails)	Worksheet	(10)
6 -- Plot sampling I (field)		(5)
7 -- Computer Simulation (Population Growth)	Worksheet	(10)
8 -- Human Demography	Life Table	(20)
9 -- Analysis of field sampling data	Scientific Paper	(25)
10 -- Computer Simulation (Keystone Predator)	Worksheet	(10)
11 -- Plot sampling II (field)		

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## **Ecology (BIOL 3250) – Fall 2020 Expectations of Students**

1. Students will wear a fitted facial covering of nose and mouth at all times indoors and when unable to distance outdoors (NOTE: neck gators are not effective and therefore will not meet this requirement; masks with exhaust valves also are not effective, as they vent particles into the air). This is CDC guidance and also a requirement of the University System and VSU; beyond that, it is



