

EVOLUTION
BIOL3321 CRN 21304
SPRING 2020

INSTRUCTORS:

Philip Lavretsky, B318 Biology Building, 747-6424, plavretsky@utep.edu
Michael Moody, B306 Biology Building, 747-5087, mlmoody@utep.edu

COURSE MEETING AND LOCATION:

Lectures: T/Th 12:00-1:20 (Quinn Hall 212)

TEXTBOOK (REQUIRED):

- Freeman, Scott, and Jon C. Herron. 2014. *Evolutionary analysis*. 5th Edition. Pearson Prentice Hall, NJ.

COURSE OBJECTIVES:

- Define biological evolution and discuss the rise of modern evolutionary biology
- Apply genetics to evolutionary biology
- Know what conditions are required for natural selection to operate
- Understand natural selection, including the models and events that shape molecular evolution
- Apply quantitative genetics to evolutionary biology
- Define adaptations, how they evolve, and understand at what level selection is operating
- Define and understand phylogenetic theory and how to assess phylogenies
- Differentiate between species concepts and understand the mechanistic hypotheses for speciation

Grading:

Quizzes (drop one)	50 pts (10%)
iClicker (drop three)	50 pts (10%)
<u>EXAMS 1-4</u>	<u>400 pts (80%)</u>
Total for students:	500 pts

Grades will be assigned as: 90+% = A, 80-89% = B, 70-79% = C, 60-69% = D, <60% = F.

POLICY ON MAKE-UP EXAMINATIONS: No make-up exams will be given for reasons other than extreme illness (doctor's note required), absence with the instructor's prior approval, or when a student is on official University business (documentation required). Make-up exams will be scheduled at the Instructor's convenience.

POLICY ON ACADEMIC HONESTY: Academic Dishonesty will not be tolerated. It includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. If you have any questions regarding the university policy on scholastic dishonesty please contact the Dean of Students.

POLICY ON ELECTRONIC DEVICES: Be courteous to your fellow students and lecturer. Turn off any cell phones, smart phones, Blackberries, etc. during lecture. You cannot text, surf the internet, watch movies, listen to music, etc. in my class. **You will be asked to leave if this happens**

ATTENDANCE POLICY: Regular attendance will be necessary for success in this class.

POLICY ON DISRUPTIVE BEHAVIOR: Any student who disrupts the class will be asked to leave and will be referred to the Dean of Students.

DISABILITY STATEMENT: If you have a disability and need classroom accommodations, please contact: The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.

MILITARY STATEMENT: If you are a military student with the potential of being called to military service and /or training during the course of the semester, you are encouraged to contact me at the beginning of the semester.

	Date		Lecture Topic	Instructor - Chapter(s)
WEEK 1	21-Jan	<i>Tues</i>	Introduction to Evolution	Lavretsky - Chapters 2
	23-Jan	Thurs	Genetic Variation & Evolutionary Change	Lavretsky - Chapter 5 & 6
WEEK 2	28-Jan	<i>Tues</i>	Genetic Variation & Hardy-Weinberg Principle	Lavretsky - Chapter 6
	30-Jan	Thurs	Effective Population Size & Population Subdivisions	Lavretsky
WEEK 3	4-Feb	<i>Tues</i>	CLASS CANCELLED	CLASS CANCELLED
	6-Feb	Thurs	Mutation & Genetic Drift	Lavretsky - Chapter 7
WEEK 4	11-Feb	<i>Tues</i>	Gene Flow & Neutral Divergence	Lavretsky - Chapter 6
	13-Feb	Thurs	TEST 1	TEST 1
WEEK 5	18-Feb	<i>Tues</i>	Selection I - Natural Selection	Lavretsky - Chapter 3 & 6
	20-Feb	Thurs	Selection II – Sexual Selection	Lavretsky - Chapter 11
WEEK 6	25-Feb	<i>Tues</i>	Selection III – Selection Cont.	Lavretsky - Chapter 11
	27-Feb	Thurs	Linkage DisEQ & Evolution of Sex	Lavretsky – Chapter 8
WEEK 7	3-March	<i>Tues</i>	Quantitative Genetics	Lavretsky – Chapter 9
	5-March	Thurs	Genome Evolution	Lavretsky – Chapter 15
WEEK 8	10-Mach	<i>Tues</i>	Study Day	Study Day
	12-Mach	Thurs	TEST 2	TEST 2
WEEK 9	17-March	<i>Tues</i>	SPRING BREAK - NO CLASS	SPRING BREAK - NO CLASS
	19-March	Thurs	SPRING BREAK - NO CLASS	SPRING BREAK - NO CLASS
WEEK 10	24-March	<i>Tues</i>	Studying Adaptation – Form and Function	Moody – Chapter 10
	26-March	Thurs	Studying Adaptation – Form and Function	Moody – Chapter 10
WEEK 11	31-March	<i>Tues</i>	Other Life History Characteristics	Moody – Chapter 13
	2-April	Thurs	Mechanisms of Speciation	Moody – Chapter 16
WEEK 12	7-April	<i>Tues</i>	Mechanisms of Speciation	Moody – Chapter 16
	9-April	Thurs	Estimating Evolutionary Trees	Moody – Chapter 4
WEEK 13	14-April	<i>Tues</i>	TEST 3	TEST 3
	16-April	Thurs	The Origins of Life	Moody – Chapter 17
WEEK 14	21-April	<i>Tues</i>	Evolution and the Fossil Record	Moody – Chapter 18
	23-April	Thurs	Development and Evolution	Moody – Chapter 19
WEEK 15	28-April	<i>Tues</i>	Human Evolution	Moody – Chapter 20
	30-April	Thurs	Evolution and Human Health	Moody – Chapter 14
WEEK 16	5-May	<i>Tues</i>	Evolution and Global Change	Moody –
	7-May	Thurs	Study Day	Study Day
FINALS	12-May	Tues (1-3pm)	TEST 4	TEST 4

