

**THE UNIVERSITY OF TEXAS AT EL PASO  
COLLEGE OF SCIENCE  
DEPARTMENT OF SCIENCE**

**Course #:** B5316  
**Course Title:** Biosystematics  
**Credit Hrs:** 3  
**Term:** Spring 2016  
**Course Meetings & Location:** Tuesday/Thursday 10:30- 11:50pm  
Business Administration Building 303  
**Prerequisite Courses:** None  
**Course Fee: (if applicable)** None  
**Instructor:** Walsh/Moody  
**Office Location:** Biology 218/Biology 306  
**Contact Info:** Phone # 747-5421/747-5087  
E-mail address: ewalsh@utep.edu/mlmoody@utep.edu

**Office Hrs:** TBA  
**Textbook(s), Materials:** Required: None  
Suggest: None

**Course Objectives (Learning Outcomes):** This course is designed to acquaint students with the procedures of modern systematic biology, including an historical overview of methods, and an in-depth treatment of the phylogenetic approach. The latter will include methods of coding characters, outgroup choice and the determination of character polarity, tree-building methods, and statistical assessments of the strengths of support for particular tree topologies. Homework exercises will accompany presentations of this material to familiarize students first with the details of tree construction techniques. Other topics to be explored will include museums and collections, the International Code of Zoological Nomenclature, systematics and classification, and the use of well-corroborated phylogenetic hypotheses to investigate broader questions in evolutionary biology. The course will be taught in a lecture/discussion format.

**Course Activities/Assignments:** **Project.** This will be an analysis of the interrelationships (in all senses) among a set of unit taxa found in ephemeral playas of the Chihuahuan Desert. Students will select a study group from a provided list (with approval of the instructors) **by Tues. Aug. 30.** A written report will be turned in during finals week, in the form of a professional journal publication; that is, with an introduction and literature review, materials and methods section, results, and a discussion (being sure to compare results from the methodologies applied, and to reach some ecological/biogeographic/evolutionary conclusions if possible). A 30 min. final presentation will be given describing your results and conclusions to the class. Further details will be given to you in class. **Begin this project immediately -- “things always take longer than you think, even when you take into account Hofstaeder’s Law”** (Hofstaeder’s Law -- from his Göedel, Escher, Bach).

**Assessment of Course Objectives:** Assessment will take place through exams, presentations and assigned problem sets

**Grading Policy:**

FINAL EXAM, TOTAL.....	25%
HOMEWORK, LABS, DISCUSSION, QUIZZES....	20%
PROJECT.....	40%
PRESENTATION.....	15%

**Make-up Policy:** NO make-up exams will be given for reasons other than illness (doctor's note required), absence with the instructor's prior approval, or when a student is on official University business (documentation required BEFORE the absence). Make-up exams will be scheduled on Fridays at 5 pm. The same policy will be followed for missed laboratory work.

**Academic Integrity Policy:** Academic Dishonesty will not be tolerated. All university guidelines will be strictly followed. Please read these guidelines carefully. If you have any questions regarding the university policy please contact the Dean of Students.

**Civility Statement:** Please come to class on time. It is disturbing and distracting everybody if people come in late. Please do not hold private conversations during lectures, but feel free to ask questions or start a discussion at any time. Cell phones MUST be turned off during class. DO NOT answer phones while in class.

**Disability Statement:** If a student has or suspects he/she has a disability and needs an accommodation, he/she should contact the Center for Accommodation and Support Services (CASS) at 747-5148 or at [cass@utep.edu](mailto:cass@utep.edu) or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any CASS accommodation letters and instructions.

**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 no later than August 28.

**Campus Carry:** Persons holding a Concealed Handgun License can lawfully carry their handgun into a UTEP classroom as long as the gun remains concealed. Open carry remains prohibited on campus. In other words, none of us should see (or be able to tell that there is) a gun at UTEP. Call the University Police at 747-5611 or dial 911 if you see any individual on campus with a handgun or other type of weapon. For more information on campus carry, see [<http://sa.utep.edu/campuscarry/>]; for more information on overall campus safety, see [<http://admin.utep.edu/emergency>].

**SCHEDULE - Fall 2016**

<b>Date</b>	<b>Topic</b>	<b>Activity</b>	<b>Instructor</b>
Aug 22	History/Project Introduction		Walsh/ Moody
<b>Aug 29</b>	<b>Alignment Tools</b>	<b>Lab Thurs</b>	<b>Walsh</b>
<b>Sept 5</b>	<b>Neighbor joining/Parsimony</b>	<b>Lab Thurs</b>	<b>Moody</b>
<b>Sept 12</b>	<b>Model of Evolution/Maximum Likelihood</b>	<b>Lab Thurs</b>	<b>Walsh</b>
<b>Sept 19</b>	<b>Bayesian</b>	<b>Lab Thurs</b>	<b>Walsh</b>
Sept 26	Coalescence/Gene v Species Trees	Quiz/Homework	Walsh
Oct 3	Reticulate Evolution	Quiz/Homework	Moody
Oct 10	Character Mapping/Dating	Quiz/Homework	Moody
Oct 17	Diversification rates	Quiz/Homework	Moody
Oct 24	Phylogeography	Quiz/Homework	Moody
Oct 31	Phylogenetic taxonomy	Quiz/Homework	Walsh
Nov 7	Phylogenomics	Quiz/Homework	Walsh
Nov 14	Phylogenetic conservation	Quiz/Homework	Moody
Nov 21	Projects/Thanksgiving		Moody/Walsh
Nov 28	Projects		Moody/Walsh
<b>Dec 8</b>	<b>Final Exam 10-12:45/Report Due</b>		