

BIOL 4303

Evolution



Instructor: Robert C. Dowler

Email: robert.dowler@angelo.edu

Phone: 325-486-6639

Office: 020 Cavness Science

Office Hours: Tuesday 10:00 – 10:45, Wednesday 9:00 – 11:00, Thursday 10:00 – 10:45, or by appointment.

Course Information

Course Description

This course is an overview of the history of evolutionary thought and the principles of modern evolutionary biology.

Prerequisite and Co-requisite Courses

Credit for a course in genetics is a prerequisite. Students enrolled in genetics during the same semester may request permission to take the course.

Prerequisite Skills

Accessing Internet websites, using ASU Library resources, and using Blackboard.

Student Learning Outcomes

- The primary goal of this course is to give an overview of evolutionary theory and to demonstrate the fundamental nature of evolution to the science of biology. This will be achieved, in part, through the presentation of current research topics in evolution. Students successfully completing this course should have a broad understanding of evolutionary theory, including the history of evolutionary thought, natural selection, sexual selection, the causes of evolution, the significance of Hardy-Weinberg equilibrium, the process of speciation, and human evolution. Overall, students should finish this course with an appreciation for the importance of an evolutionary view in the study of biology. Students will

be able to recall the phylum level diversity of the Kingdom Animalia and identify typical members of the major phyla and their anatomy.

Course Delivery

This is a face-to-face course with learning resources and supplemental materials posted in Blackboard.

Required Texts and Materials

Textbook: Jon C. Herron and Scott Freeman. 2014. *Evolutionary Analysis*, 5th ed. Prentice Hall, Upper Saddle River, New Jersey.

Shubin, Neil. 2008. *Your inner fish. A journey into the 3.5-billion-year history of the human body*. Pantheon Books, New York, 229 pp.

Top Hat: Attendance and short reading tests will be given using Top Hat software/application product. Top Hat requires everyone to have a smartphone, tablet, or laptop with them in class.

Technology Requirements

To successfully complete this course, students need to purchase a subscription to Top Hat. When enrolling for Top Hat, please use your university e-mail address.

Communication

Faculty will respond to email and/or telephone messages within 24 hours during working hours Monday through Friday. Weekend messages may not be returned until Monday.

Written communication via email: All private communication will be done exclusively through your ASU email address. Check frequently for announcements and policy changes. In your emails to faculty, include the course name and section number in your subject line.

Grading

Evaluation and Grades

The course grade will be based on a combined total of 600 possible points as follows. Exam 1-100 points, Exam 2-150 points, and the comprehensive final exam is 200 points each. Eleven short reading tests over book chapters will be worth 15 points each with the lowest one dropped for a combined total of 150 points (25% of course grade).

Assessment	Percent of Total Grade
Exam 1	16.5
Exam 2	25
Final Exam	33.5
Short reading tests	25

MAKE-UP EXAMS

Make-up exams will be given only in emergency situations which preclude class attendance. Arrangements for excused make-up exams should be made prior to the scheduled date of the exam, unless it is a health emergency, in which case you should contact me by the first class following the absence.

Grading System

Course grades will be dependent upon completing course requirements and meeting the student learning outcomes.

The following grading scale is in use for this course:

- A = 90.00-100 points
- B = 80.00-89.99 points
- C = 70.00-79.99 points
- D = 60.00-69.99 points
- F = 0-59.99 points

General Policies Related to This Course

All students are required to follow the policies and procedures presented in these documents:

- [Angelo State University Student Handbook](#)¹
- [Angelo State University Catalog](#)²

Attendance

Attendance in class is expected and daily attendance records will be kept for administrative purposes. Because lectures emphasize the material covered on exams, those students that miss classes usually do worse on exams and in the course than those students who attend all classes. I consider absences in excess of 3 classes to be

excessive. Attendance will be checked by using Top Hat. **NOTE: You are NOT automatically dropped if you stop attending class.**

Academic Integrity

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

The College of Science and Engineering adheres to the university's Statement of Academic Integrity <https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=97>

Accommodations for Students with Disabilities

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student's responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the [Student Disability Services website](#).³ The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
325-942-2047
dallas.swafford@angelo.edu
Houston Harte University Center, Room 112

Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would

keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 [Grading Procedures](#)⁴ for more information.

Student Absence for Observance of Religious Holy Days

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for [Observance of Religious Holy Day](#)⁵ for more information.

Title IX at Angelo State University

The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including: sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance.

Students are encouraged to report any incidents of sexual misconduct directly to ASU's Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator at:

Michelle Miller, J.D.
Special Assistant to the President and Title IX Coordinator
Mayer Administration Building, Room 210
325-486-6357
michelle.boone@angelo.edu

You may also file a report online 24/7 at www.angelo.edu/incident-form.

If you are wishing to speak to someone about an incident in confidence you may contact the University Health Clinic and Counseling Center at 325-942-2173 or the ASU Crisis Helpline at 325-486-6345.

For more information about Title IX in general you may visit www.angelo.edu/title-ix.

Information About COVID-19

Please refer to ASU's [COVID-19 \(Coronavirus\) Updates](#)⁶ web page for current information about campus guidelines and safety standards as they relate to the COVID-19 pandemic.

Course Schedule – Biology 4303 – Evolution

Week of	Lecture Topic	Text Chapter
17 January	Introduction; Science, religion, and evolution	2 (part)
24 January	History of evolutionary thought (Test1 – Perimeter of Ignorance – Jan 27)	2 (part)
31 January	Darwin (Test 2 – Ch 1 – Feb 3)	1, 2
7 February	The Modern Synthesis and evidences of evolution (Test 3 – Ch 2 – Feb 10)	2, 3
14 February	Natural selection & adaptation (Test 4 – Ch 3 – Feb 17)	3, 9 (only 9.6)
21 February	Mechanisms of evolutionary change – mutation (Test 5 – Ch 14 – 24 Feb)	5, 14
28 February	**** March 3 Exam 1 ****	
	Genetics and Hardy-Weinberg equilibrium	6
7 March	Genetic drift, migration, assortative mating (Test 6 – Ch 1-4 YIF – Mar 10)	7 (part)
14 March	Spring Break	
21 March	Species concepts and mechanisms of speciation (Test 7 – Ch 5-7 YIF – Mar 24)	16
28 March	Origin of life (Test 8 – Ch 8 – 11 + epilogue YIF – Mar 31)	17
4 April	Precambrian evolution; Endosymbiosis (Test 9 – Ch 11 – Apr 7)	11,17
11 April	**** April 14 Exam 2 ****	
	Cambrian explosion & beyond, Continental drift.	18
18 April	Vertebrate evolution Test 10 – Ch12 – Apr 21)	18, 12
25 April	Human evolution	20
2 May	Human evolution Test 11 – Ch 20 – May 5)	20
9 May	***8 a.m. class -10 MAY 8:00 a.m. Final Exam ***11a.m. class-10 MAY 10:30 a.m. Final Exam	

¹ <https://www.angelo.edu/current-students/student-handbook/>

² <https://www.angelo.edu/academics/catalog/>

³ <https://www.angelo.edu/current-students/disability-services/>

⁴ <https://angelo.policystat.com/policy/10659448/latest/>

⁵ <https://angelo.policystat.com/policy/10659368/latest/>

⁶ <https://www.angelo.edu/covid-19/>