



FACULTY-LED
STUDY ABROAD

KIIS Ecuador Program, Summer 2022

BIOL 316 Evolution: Theory and Process

Instructor: Sherry Harrel, Ph.D.

Email: sherry.harrel@eku.edu

Instructors' office hours: on site and by appointment

Syllabus subject to change

Course Description: Evolution is the foundational idea which unites all sub-disciplines of biology. It is also the central principle in biology which ties that science to the other sciences including astronomy, chemistry, geology, and physics. This course examines the set of diverse observations that supports the theory and examines the forces and mechanisms that cause evolutionary change. We will capitalize on the richness of tropical ecosystems by integrating the historical and modern observations and inferences made by others with our own observations in rain forest, tropical montane, and equatorial island (Galapagos Islands) ecosystems.

Overall KIIS Program Student Learning Outcomes:

KIIS Study Abroad Mission Statement:

KIIS provides high-quality education abroad programs for students from all diverse backgrounds that promote deep international learning, are integrated into the curriculum, and encourage critical and creative thinking. Our goal is to help students understand the wider world and develop personal and professional skills for lifelong enrichment. We strive to go beyond generalizations and cultural stereotypes to help foster a nuanced appreciation of the world in which we live.

Students participating on KIIS study abroad programs aim to:

- 1) Understand contemporary issues of their host country/countries (i.e. KIIS program location).
- 2) Develop skills to interact comfortably in a global setting.
- 3) Understand other cultures.

Prior to your KIIS study abroad program, and again at the conclusion of your program, KIIS will ask each student to a) answer a few multiple-choice questions, and b) write a short reflective essay (two paragraphs in length) related to the elements detailed above. There is no right or wrong answer, and your responses will not affect your grade in any way. The purpose of the exercise is to help KIIS measure the effectiveness of its study abroad programs.

Course Objectives and Specific Learning Outcomes: Upon successful completion of this course, students will be able to:

- describe important areas of research in biology and related fields that contributed to the development of evolutionary theory;
- use evidence from a variety of scientific fields to demonstrate the accuracy and usefulness of evolution as a scientific theory;
- describe the process of natural selection;
- describe molecular-level process that lead to evolutionary change;
- apply evolutionary concepts to explain patterns of distribution of organisms on Earth, including patterns observed in mainland Ecuador and Galapagos Island ecosystems;
- apply evolutionary concepts to describe and explain the history of life on Earth; and
- use knowledge of biology, geology, and other sciences to evaluate challenges to evolutionary theory from outside science (e.g., the intelligent design initiative).

Major Topics covered in the Course: This course will cover the origin of the theory, Darwin in the Galapagos, evidence for evolution, phylogenies & tree thinking, natural selection & genetic drift, and molecular evolution.

Required Readings and Materials:

Coyne, Jerry A. 2009. *Why Evolution Is True*. Penguin Group. ISBN: 978-0143116646

Carroll, Sean B. 2006. *The Making of the Fittest*. W. W. Norton & Co. ISBN: 978-0393330519

Additional readings to be distributed electronically.

[Reading assignments and reading preparation question sets should be completed prior to leaving for Ecuador.]

Graded Assignments: Grading will be out of a total of 1,000 points, and will follow the grading scale below:

A = 900 – 1000 pts, B = 800 – 899 pts, C = 700 – 799 pts, D = 600 – 699 pts, F < 600 pts

| Pre-Trip Assignments | | |
|--|--|------------|
| Readings | Assessments of reading comprehension of course reading material | 200 points |
| During Trip Assignments | | |
| Journal Entries | Daily entries that include reflections on course readings, class discussions, and field experiences. | 200 points |
| Participation in all activities | Students are expected to attend all lectures, tours, and field trips. Each unexcused absence will result in 50 points deducted from grade. | 500 points |
| Final Exams | Final exam will assess your ability to integrate readings, discussions, and field experiences in making defensible inferences about the natural world. | 100 points |

Attendance Policy:

KIIS program participants are expected to be punctual to and in attendance at all classes, presentations, meetings and required excursions, and to remain with the program for the full academic period. Unexcused absences from classes and/or mandatory meetings will result in a lowering of the student's final grade, as will excessive tardiness. Multiple unexcused absences could result in expulsion from the program. Any absence from an academic class session must be excused for medical reasons.

Disability Accommodation:

KIIS will make every reasonable effort to provide accommodations for program participants with special needs or disabilities, but we cannot guarantee that we will be able to do so. Be aware that many foreign countries do not have comprehensive legislation comparable to

the Americans with Disabilities Act (ADA). As a result, businesses and other establishments operating in foreign countries may not be able to provide accommodations.

If you have a disability accommodation need, we recommend you contact your KIIS Campus Representative, <https://www.kiis.org/about-kiis/contact-us/campus-representatives/> early in your program selection process so that s/he has time to discuss any specific needs, including which KIIS programs may be best suited. You also are welcome to contact KIIS Assistant Director, Maria Canning, maria.canning@wku.edu, to discuss your disability accommodation needs (e.g. housing, transportation, excursions, class schedule, etc.).

Immediately after acceptance, notify KIIS Assistant Director, Maria Canning, or KIIS Admissions and Enrollment Specialist, Haley McTaggart, haley.mctaggart@wku.edu, if you have a special need or disability that might require any form of accommodation abroad. Failure to notify KIIS may prevent you from participating on your KIIS program.

If you require any accommodations abroad, you must provide KIIS Assistant Director, Maria Canning, or KIIS Admissions and Enrollment Specialist, Haley McTaggart, an accommodation letter from your home campus' disability accommodation office that lists the accommodations you are eligible to receive. Please do not request accommodations directly from your KIIS Program Director or other KIIS Faculty; the KIIS Office will notify your KIIS Program Director and/or Faculty after we have received your above accommodation letter.

In some cases, you may need to make arrangements for a caregiver to join you on your KIIS program, should your physician, campus disability accommodation office, or KIIS make such a recommendation or require it.

Title IX / Discrimination & Harassment:

Recent attention to gender discrimination and sexual harassment at colleges and universities reminds us of the importance of adhering to standards of ethical and professional behavior. KIIS Study Abroad is committed to supporting and encouraging safe and equitable educational environments for our students, faculty, and program directors. Students, faculty, and program directors are required to be civil and treat each other with dignity and respect. As such, harassment and/or discrimination of any kind will not be permitted or tolerated.

Sexual misconduct (sexual harassment, sexual assault, and sexual/dating/domestic violence) and sex discrimination are violations of KIIS policies. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to a) KIIS Assistant Director, Maria Canning (+1-859-200-1000) or KIIS Executive Director, John Dizgun (+1-270-227-2288), b) WKU's Title IX Coordinator, Deborah Wilkins (270-745-5396 / deborah.wilkins@wku.edu) or WKU's Title IX Investigators, Michael Crowe (270-745-5429 / michael.crowe@wku.edu) or Joshua Hayes (270-745-5121 / joshua.hayes@wku.edu). Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a KIIS program director and/or faculty member, KIIS program directors and faculty are considered "Responsible Employees" of Western Kentucky University and MUST report what you share to WKU's Title IX Coordinator or Title IX Investigator.

If you would like to speak with someone who may be able to afford you confidentiality, you may contact WKU's Counseling and Testing Center, <https://www.wku.edu/heretohelp/> at 270-745-3159.

For more information on KIIS Title IX, see <https://www.kiis.org/students/health-safety/title-ix-clery/>; additional Title IX resources can be found here <https://www.wku.edu/eo/titleixbrochure2020.pdf>.

Everyone should be able to participate on a KIIS program, attend a KIIS event, or work in a KIIS environment (e.g. KIIS office) without fear of sexual harassment or discrimination of any kind. Be respectful of each other.