



Course Title: Roots of Evolution: Exploring Darwin's Legacy in England

Program and Date: London Signature Program May 27 – June 15, 2025

Academic Department: Biology

Instructor Name: Dr. Timothy Spier

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Get to Know Your Professor

Dr. Spier studies fish ecology in Kentucky Lake, Lake Barkley, and the streams of the Land Between the Lakes in western Kentucky. Besides Principles of Evolution, he teaches such classes as Zoology, Biological Applications of GIS, Ecology, Ichthyology, and Fisheries Management. When not at work, Dr. Spier loves hiking with his family, fishing, working in his butterfly garden, and hanging out with his chickens. He is especially excited about teaching evolution in London because this will connect him to Charles Darwin in ways that cannot be replicated in the states.

Course Description

Evolution by natural selection is an idea which unites all aspects of biology, and the history of Charles Darwin's development of these ideas is fascinating. Learn about the principles of evolution in London, the same location where Darwin formulated his ideas. We will connect to Darwin's history by taking advantage of the many programs in England dedicated to his legacy, such as the Darwin Centre at the Museum of Natural History, the Tring Museum, and the Cambridge Museum of Zoology. Visiting Darwin's country home, Down House, will enrich your understanding of Darwin's character, working methods, and contributions to science.

Course Level

This course is available for undergraduate and honors credit.

Prerequisite(s)

Any introductory biology course, or consent of instructor.



Student Learning Outcomes

Upon completion of all coursework with a passing grade and full participation in course activities, students shall be able to:

- 1) Describe the factors which make science different from other methods for understanding the natural world.
- 2) Explain why evolution is the best scientific explanation of the diversity and history of life.
- 3) Use a visit to Darwin's country home to evaluate the development of his ideas in the context of the norms of mid 1800's society.
- 4) Relate basic concepts in chemistry and geology to the study of evolution.
- 5) Use examples from museum displays or a fossil hunting trip to explain the influence of the fossil record on Darwin's ideas.
- 6) Use examples from the Darwin Centre at the London Museum of Natural History and the Tring Museum as evidence of evolution.
- 7) Provide details concerning genetic changes in organisms which lead to the evolution of new species.
- 8) Describe the history of life on Earth with special emphasis on the evolution of humans.

Required Readings and Materials

Shubin, N. 2009. *Your Inner Fish: The amazing discovery of our 375-million-year-old ancestor*. Pantheon Books, New York. 242 pages. ISBN 978-0307277459. This book can be purchased online. Other readings will be shared with you online via a shared Google drive.

Assignments and Grades

Your final grade will be based upon several assignments, quizzes, exams, projects, and discussions throughout the course. These items will be broken down into "pre-trip", "on site", and "post-trip" sections.

Pre-Trip (20% of final grade): (May 12 – May 26) We will have several online meetings and lectures during this period. During these online meetings we will get to know each other. We will also discuss the book "Your Inner Fish" by Neil Shubin and other short readings. Your grade will be determined by your contribution to our discussions, written summaries of our readings, and short quizzes.

On Site (50% of final grade): (May 27 – June 19) We will meet for discussions and excursions nearly every weekday while in London. Your grade will be determined by participation in class discussions and excursions (30% of final grade) and written summaries related to our excursions (30% of final grade).



Post-Trip (30% of final grade): We will have a post-trip online meeting, and you will have a take-home exam. Your grade will be determined by your level of participation in our post-trip meeting and your score on the take-home exam.

Any student wishing to receive honors credit for this course must complete an extra written paper on Darwin or any other topic we covered in this course. This extra paper will contribute to the post-trip 20% of the final grade.

Grading Scale

The following scale will be used to compute your grade.

Grades for all components of the course are assigned as follows:

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| 90 – 100% | A - unusual ability and distinctive performance |
| 80 – 89% | B - articulate, above average performance |
| 70 – 79% | C - satisfactory performance |
| 60 – 69% | D - passing work, below standard |
| < 60% | F - work not acceptable for passing credit |

Onsite Learning Experiences and Activities

Onsite learning experiences in this class will likely include the following site visits. This is a tentative list which will be replaced with a detailed daily itinerary of class meetings and field trips prior to the departure date.

Darwin's Home, the Natural History Museum, the Cambridge Museum of Zoology, Kew Gardens, the London Zoo, the Tring Museum, Jurassic Coast fossil hunting

Attendance Policy

Attendance is mandatory at all scheduled activities and class meetings as well as field trip excursions. This includes any virtual meetings before and after the onsite experience. Repeated absences, including for ill health, will require documentation to be excused.

The only permissible excused absence would be due to serious illness (which should be communicated to me immediately). Any unexcused absences will reduce your final grade by 10%.



Academic Integrity Policy

You are expected to conduct yourself with integrity in this class. This includes performing your own work, not passing off the work of others as your own (e.g. plagiarism), and not using external sources of information during exams. The first violation of academic integrity will result in a "0" for that assignment. The second violation will result in an automatic "F" for the course.

Physical Expectations

Program requires walking 3-5 miles per day on uneven pavement in all kinds of weather and long periods of standing. Students must be able to carry their own bags/belongings.

Potentially, we will go on a fossil-hunting excursion which will require rugged outdoor clothing.

Disability Accommodation

CCSA is committed to providing access to education abroad to the extent possible in a study abroad setting. The earlier CCSA and the faculty know the needs, the more likely we can accommodate them. At a minimum, students seeking accommodations are to contact both the CCSA office and the faculty one month in advance of the program's beginning. Students seeking such accommodation must provide CCSA with a copy of the letter on file with their own Office of Disability Services outlining what services they receive on their home campus.

Title IX Policy

Sexual misconduct (including sexual harassment, sexual assault, and any nonconsensual behavior of a sexual nature) and sexual discrimination violate CCSA policies. Students experiencing such behavior may obtain support from the Onsite Program Director or the CCSA Executive Director. To report sexual misconduct or sex discrimination, contact either of these two officers. Disclosure to faculty instructors or CCSA officers of sexual misconduct, domestic violence, dating violence, or sex discrimination occurring on the program or involving a visitor, student or employee is not confidential under Title IX. Faculty and other CCSA employees are required to forward such reports, including names and circumstances, to the CCSA Executive Director.

Statement about Final Syllabus

Please note that all CCSA syllabi are subject to change, but every effort will be made to ensure participants receive notice of such changes in a timely manner.