

**EEB 305: Evolution and Society, 3 credits**  
**The University of Tennessee, Fall 2022**

**Meetings:** Monday, Wednesday, Friday, 11:30 – 12:20 am, Hesler 427

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**Textbook:** Jerry Coyne, Why Evolution is True, Penguin Press (2009).

**Course Description on EEB Web Pages:** Develop a foundational understanding of the nature of science and scientific knowledge using evolutionary biology as its focus. Explore cultural controversies surrounding and scientific controversies within the field of evolutionary biology. Writing-emphasis course.

### **Important Notes**

EEB 305 will be facilitated through Canvas. It's **REALLY IMPORTANT** that you keep up with announcements and deadlines on Canvas to be successful in this course!

EEB 305 is a non-majors course, and it is not available for credit as upper division major hours in EEB.

EEB 305 is listed as a Communicating Through Writing (WC) course for General Education Requirements.

### **What you should learn in this course**

We will go over the basics of the theory of evolution, which you will be expected to learn. These will include a review of the history of life on our planet through geological time, evidence that living organisms can be traced back to a single common ancestor, major events during the time course of evolution, and evidence both from fossils and from contemporary organisms, as well as from geographical distributions of extinct and living organisms, that evolution has occurred. We will also go over the mechanisms that produce evolutionary change, including selection (both natural and artificial), genetic drift, and polypoidy. We will look at the evolution of our own species, and bring in new results from genomic sequencing. Throughout we will consider applications of the knowledge to problems of modern society, including food production, disease, and technological innovation. We will also discuss controversies from misinterpretation and denial of the science of evolution.

### **How to succeed in this course:**

#### **Student's Responsibility**

- **Be prepared for all classes**
- **Be respectful of others**
- **Actively contribute to the learning activities in class**
- **Abide by the UT Honor Code**

#### **Instructor's Responsibility**

- **Be prepared for all classes**
- **Evaluate all fairly and equally**
- **Be respectful of all students**

## Course Schedule

Date	Day	Topic	Reading*
Aug 24	W	Introduction, What is Science	Coyne Chapter 1
Aug 26	F	What is Evolution – Overview	Coyne Chapter 1
Aug 29	M	Library Resources	Zoom Meeting Format
Aug 31	W	Time/Geological Time	Coyne Chapter 2
Sep 02	F	Fossils/History of Life	Coyne Chapter 2
Sep 05	M	Labor Day, No Class	
Sep 07	W	Changes to Earth: Plate Tectonics, Oxygen	Coyne Chapter 2
Sep 09	F	Changes to Earth: Extinctions	Coyne Chapter 2
Sep 12	M	Space Programs - NASA	
Sep 14	W	Human Evolution – Phylogeny/Timing	Coyne Chapter 8
Sep 16	F	Visit to McClung Museum	
Sep 19	M	Fish to Amphibians/Birds/Whales	Coyne Chapter 2
Sep 21	W	Evidence: Vestiges, Pseudogenes, Smell	Coyne Chapter 3
Sep 23	F	Evidence: Embryos, Bad Design	Coyne Chapter 3
Sep 26	M	<b>Summary Evaluation (Midterm Exam 1)</b>	
Sep 28	W	Phylogenetics	
Sep 30	F	Geography of Life, part 1	Coyne Chapter 4
Oct 03	M	Geography of Life, part 2	Coyne Chapter 4
Oct 05	W	<class cancelled – illness>	
Oct 07	F	Fall Break, No Class	
Oct 10	M	Mechanisms of Change – Natural Selection	Coyne Chapter 5
Oct 12	W	Mechanisms of change – Genetic Drift	Coyne Chapter 5
Oct 14	F	Domestication of plants – origins of agriculture	Coyne Chapter 5
Oct 17	M	Plant Domestication – Corn	Coyne Chapter 5
Oct 19	W	Field Trip – UT Gardens (pending weather forecast)	
Oct 21	F	Artificial Selection – Dogs	Coyne Chapter 5
Oct 24	M	Domestication of animals – cows/lactase	
Oct 26	W	Domestication of animals – chickens/rice	
Oct 28	F	Evolution of Complexity – Eyes	Coyne Chapter 5
<b>Oct 31</b>	<b>M</b>	<b>Summary Evaluation (Midterm Exam 2)</b>	
Nov 02	W	Selection – Drug/Pesticide Resistance	Coyne Chapter 5
Nov 04	F	Selection - malaria and people	Coyne Chapter 5
Nov 07	M	Origin of organelles	
Nov 09	W	Sexual Selection	Coyne Chapter 6
Nov 11	F	Sexual Selection	Coyne Chapter 6

Nov 14 M	Biological species/Geographic speciation	Coyne Chapter 7
Nov 16 W	Biological species/Sympatric speciation	Coyne Chapter 7
Nov 18 F	Allopolyploidy – Wheat + special cases	Coyne Chapter 7
Nov 21 M	Viruses and their evolution	
Nov 23 W	Thanksgiving Holiday, No Class	
Nov 25 F	Thanksgiving Holiday, No Class	
Nov 28 M	Human Evolution – Genetics and Culture	Coyne Chapter 8
Nov 30 W	Human Evolution – Genetics and Culture	Coyne Chapter 8
Dec 02 F	Misinterpretation of evolution – racism, eugenics	Coyne Chapter 8
Dec 04 M	Evolution History of Study	
Dec 06 W	Evolution and religion	
Dec 08 Tr	<i>Study Day</i>	
Dec 15 Tr	<b>Final Exam</b> – 11:30 a.m.-12:45 p.m.	

\* Textbook reading may be supplemented by additional materials

\*\*Tentative. Note that timing and topics are subject to change..

### Communications:

- You need to regularly check your utk e-mail account for weekly announcements related to this course.
- I am happy to answer your e-mail questions, but allow up to 24 hours for a response. Also, once I leave the office I may not check my e-mail until the following workday, or the first day back after a weekend.  
\*\*PUT "EEB 305" IN THE SUBJECT LINE!!! \*\*
- Please check the syllabus FIRST before you send me an e-mail to ask a question.

### Assessment of learning:

Learning assessment is important for two reasons. First, you have to receive a grade for the class and the grade you earn will be determined by how well you perform on assessments. Second (*and more importantly*), assessment helps you integrate knowledge. Studies have shown that the more often students are assessed and the more different ways they are assessed, the more likely they are to understand the material. Assessments will be done using a variety of methods including quizzes, exams, in-class assignments, and written homework.

### Exams / Quiz / Assignment Policies:

- NO make-ups for in-class assignments. Be in class and participate!
- All work should be done independently (unless group work is explicitly permitted, and then you may ONLY work within your group on the assignment); plagiarism software may be used to check written assignments for copying from classmates or other sources. **Plagiarism will result in stiff penalties.**

### Grading

Grades will be based on (1) completion of daily exercises; (2) written exercises; (3) performance on exams (midterms and final).

## ACADEMIC INTEGRITY

Each student is responsible for their personal integrity in academic life and for adhering to UT's Honor Statement. The Honor Statement reads: "An essential feature of the University of Tennessee, Knoxville is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the university, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity."

## YOUR ROLE IN IMPROVING THE COURSE THROUGH ASSESSMENT

At UT, it is our collective responsibility to improve the state of teaching and learning. During the semester you may be requested to assess aspects of this course, either during class or at the completion of the class, and through the TNVoice course evaluation. Please take the few moments needed to respond to these requests as they are used by instructors, department heads, deans and others to improve the quality of your UT learning experience.

## STUDENTS WITH DISABILITIES – <http://sds.utk.edu>

The University of Tennessee, Knoxville, is committed to providing an inclusive learning environment for all students. If you anticipate or experience a barrier in this course due to a chronic health condition, a learning, hearing, neurological, mental health, vision, physical, or other kind of disability, or a temporary injury, you are encouraged to contact [Student Disability Services](#) (SDS) at 865-974-6087 or [sds@utk.edu](mailto:sds@utk.edu). An SDS Coordinator will meet with you to develop a plan to ensure you have equitable access to this course. If you are already registered with SDS, please contact your instructor to discuss implementing accommodations included in your course access letter.

## **ACCESSIBILITY POLICY AND TRAINING** – <http://accessibility.utk.edu>

The University of Tennessee, Knoxville, provides reasonable accommodations for individual students with disabilities through its office of [Student Disability Services](#). The university is also committed to making information and materials accessible, when possible. Resources and assistance to support these efforts can be found at <http://accessibility.utk.edu/>.

## **WELLNESS** – <http://wellness.utk.edu/> and <http://counselingcenter.utk.edu/>

The [Center for Health Education and Wellness](#) empowers all Volunteers to thrive by cultivating personal and community well-being. The Center can answer questions about general wellness, substance use, sexual health, healthy relationships, and sexual assault prevention. The [Student Counseling Center](#) is the university's primary facility for personal counseling, psychotherapy, and psychological outreach and consultation services.

Any student who has difficulty affording hygiene products, groceries, or accessing sufficient food to eat every day is urged to contact the [Big Orange Pantry](#) for support. The Big Orange Pantry, located in Greve Hall, is a free resource for all students, faculty, and staff, no matter how great or small their need is. Students who need emergency financial assistance can also request funding from the [Student Emergency Fund](#).

Students who are experiencing non-academic difficulty or distress and need assistance should call 974-HELP or [submit an online referral](#). The 974-HELP team specializes in aligning resources and support to students experiencing mental health distress.

## **EMERGENCY ALERT SYSTEM** – <http://safety.utk.edu/>

The University of Tennessee, Knoxville, is committed to providing a safe environment for learning and working. When you are alerted to an emergency, please take appropriate action. Learn more about what to do in an emergency and sign up for UT Alerts. Check the emergency posters near exits and elevators for building specific information. In the event of an emergency, course schedules and assignments may be subject to change. If changes to graded activities are required, reasonable adjustments will be made, and you will be responsible for meeting revised deadlines.

## **COVID-19 GUIDELINES** (updated August 8, 2022)

[CDC guidance](#) recognizes the changing dynamics of living in a world with COVID-19. It rates COVID-19 community levels as low, medium, and high, with recommendations at each level about the use of masks and other precautions. At all levels of community spread, staying up-to-date with vaccination is the best way to protect yourself from serious illness and to limit the spread of COVID-19. Wearing a mask is always an option for any individual who chooses to do so, and the CDC recommends that those with high risk of severe illness talk with their health care providers. If you are sick, please stay in, avoid being around others as much as possible, and contact your health care provider for any symptoms that are worsening, moderate to severe, or concerning to you. For more information about vaccination or to self-report an illness and receive support, visit <http://studenthealth.utk.edu/CommunityHealth>. For more information about COVID-19, visit <http://studenthealth.utk.edu/covid-19>.