

Biology and Society – BIO 396 – 3 credits
University of Rhode Island – J-Term 2023
Tue-Fri 6:00-9:00 PM – Online
Dr. Scott Ruhren

Date	Topic	Readings & Assignments
Week 1 –		
1/3	Course introduction – <i>“The burden of proof,” society’s role etc.</i> Scientific methods, language, integrity, ethics,	Presentation (Ruhren)
1/4	Invasive species ecology and evolution	Presentations (TBD)
1/5	Rare, endangered and threatened species	Presentations (TBD)
1/6	Blended class day	Portfolio review and weekly summary
Week 2 –		
1/10	Climate change – <i>From science to hysteria</i> Paleontology, climatology and ecology	Presentations (TBD)
1/11	Agriculture strategies, changes and threats – <i>Improve, restore, rehabilitate</i> Judgments, decisions and objectives	Presentations (TBD)
1/12	Human health and disease – <i>Fears, success, future</i> Ecology and evolution	Presentations (TBD)
1/13	Blended class day	Portfolio review and weekly summary
Week 3 –		
1/17	Environmental issues and environmental ethics – <i>Define and critique</i>	Presentations (TBD)
1/18	Technology advances, challenges and controversies	Presentations (TBD)
1/19	Final Projects	Weekly summary
1/17	Blended class day	Final portfolios submitted

Course Description: This seminar course focuses on understanding the impact of biological discoveries on societal questions and the social influences that affect biological discovery. We will discuss how biology shapes our lives, including human evolution, health and disease, conservation and global climate change. We will integrate across multiple levels of biological organization from molecules to biomes in order to understand how biological mechanisms influence our daily lives. Students will read and discuss primary scientific literature and popular science content (e.g. magazines, newspapers, blogs and books) related to biology and society. To demonstrate information literacy, students will conduct independent research to produce a final project (e.g. poster or video) and

accompanying short paper, giving students the opportunity to apply creatively their knowledge, research skills, and critical thinking abilities to a broad, integrative question in biology and society.

(Blended class days are for review of literature, preparation of presentations and feedback from your professor.)

Pre-requisites: Junior or senior standing in Biological Sciences (BS), Biology (BA) or Marine Biology (BS).

Course Goals:

- To provide students with a working understanding of the reciprocal relationship and influences of biology and society, specifically exploring how biology shapes our lives.
- To foster critical thinking skills through reading and critiquing the scientific literature, and participating in and leading class discussions.
- To expose students to the scientific process and increase scientific and information literacy.
- To better understand how biological principles apply to humans and our influence on the natural world.

Relationship to the URI General Education Program:

Successful completion of BIO 396 results in full coverage of two outcomes in the URI general education program: Information Literacy (B4) and Integrate and Apply (D1).

Learning Outcomes: At the end of this course, you will be able to:

- Identify key biological concepts and their importance in the context of human society.
- Evaluate data, arguments, and conclusions in scientific papers and formulate new hypotheses based on readings from the scientific literature.
- Collect literature, data, and media on a specific biological topic.
- Apply biological and evolutionary concepts to novel examples from the scientific literature.
- Demonstrate knowledge of biological and evolutionary mechanisms and how they affect our lives.

Instructor: Scott Ruhren, Ph.D. E-mail: sruhren@uri.edu
Department of Biological Sciences and College of Continuing Education

Office Hours: 5:30 Tuesday to Thursday and by arrangement (Please contact me via e-mail.)

Textbook & Readings: Readings will be available in class and electronically.

Distribution of Points		Approximate Grade Cutoffs	
Participation	30%	≥ 90%	= A- to A
Presentation	30%	80-89%	= B- to B+
Portfolio	10%	70-79%	= C- to C+
<u>Final Project</u>	<u>30%</u>	60-69%	= D- to D+
Total Possible	100%	< 60%	= F

Attendance: J-term courses depend on attendance. **Documented medical illnesses, emergencies, observance of religious holidays or participation in university-sanctioned athletics or events are the only valid excuses for missing classes and deadlines.** The participation grade is based on an assessment of your involvement.

Students are responsible for all missed notes and work. Missed assignments will count as a zero unless excused. In the event of illness, please make every effort to contact me before the missed class, and provide a doctor's note after the fact. Other excuses will be handled on a case-by-case basis. If you have a planned schedule conflict, please contact me as soon as possible. Finally, extra credit will not be available.

Snow and other emergencies: The University determines if classes will be canceled due to weather or other conditions. Please follow announcements on the URI emergency contact system. We will have plans to make up missed classes and work and may need to use the Friday “Blended class day.”

Academic Integrity: As a URI student, you have an obligation to conduct your academic work with honesty and integrity according to University standards. It is expected that all work that you submit will be your own. Cheating will not be tolerated in this course. It is unfair to your fellow students and it is disrespectful to your instructor. Should you be found to be guilty of cheating, you will receive a zero for that exam or assignment and a record of that misconduct will be filed with the Dean of Students office. In addition, other sanctions may include failure in or removal from this course or expulsion from the University. Should you observe a classmate engaged in academic misconduct, please bring it to my attention. For more information see the University Manual (http://www.uri.edu/facsen/MANUAL_06.html).

Special Needs and Outside Help: Students seeking academic assistance and with documented disabilities should inform the instructor as soon as possible so that accommodations can be made. Students should also contact Instructional Support and the Academic Skills Center. All situations are confidential. Their friendly staff of learning specialists and student tutors can help you find an approach to studying that suits your needs and schedule, develop effective study strategies, understand course concepts and practice productively.

Electronic Equipment: The use of personal electronic equipment such as laptops and tablets is permitted during lectures with permission. However, please silence and put away phones during class time.

Graded Opportunities:

Student-led Discussions: Each student will be responsible for team-leading the classroom discussion of a topic based on the syllabus, chapters from the book as well as other assigned materials. Students may choose to provide additional background information (e.g. videos) or lead an activity that illustrates important biological and societal concepts. You get to choose your topic by signing up in class. Each presenter should prepare 30-45 minutes of material as part of a longer team presentation.

Final Project Presentation and Paper: During the time scheduled for our final exam, we will hold a symposium where you will present your final project, a talk with video or poster that you have created to apply your knowledge and skills to an important question in biology and society. You will each prepare and present on a specific answer to a very broad question: **How does biology shape our lives and society?** Reading and discussing book chapters and scientific papers during class will provide the inspiration for digging deeper into the biological and societal aspects of an evolutionary question important to you. I will help guide the identification of a specific question that you will answer with your research. You will find at least 10 scholarly articles that are relevant to answering your chosen question. You will prepare a visually effective project (e.g. a slideshow, video or poster), a fifteen-minute (approx.) talk to present to the class, and a short paper (~5 pages) with an annotated bibliography, citing all your sources. This will be turned in at the time of our symposium. Details about finding and citing sources and other helpful guidance for this project will be provided in class. You must have your topic approved by the instructor.

Course Portfolio: This is an electronic document where you will organize all of your assignments in chronological order for the entire semester. This will consist primarily of answering a set of questions for the reading assignment (this includes every class meeting except the first introductory lecture). These assignments are due prior to class on the day the material will be discussed. You cannot fully participate in this course without reading and thinking about the material prior to class. Most assignments will ask you to answer a set of questions about the readings, which is expected to be a full page for each chapter or paper you read. Beyond the questions posed for each chapter, you should also expand on your reflections on the reading. Plus, synthesize key concepts, define unfamiliar terms and concepts, make connections with your existing knowledge base, write out questions you have about the

material to ask in class, and review media, images, videos, websites, and other resources relevant to the topics covered in each class (this is similar to the CREATE process for critically evaluating scientific resources).

These assignments are designed to maximize your engagement with the course material, guide your mastery of it, prepare you for in-class discussions, and build toward your end-of-term video or poster presentation. You must write in your own words; quoting longer than one sentence at a time is not permitted. Your portfolio is an electronic document that you update and upload to Sakai prior to each class meeting. Grading is based on whether you completed the assignments thoughtfully, professionally, and on time, not whether you completed them entirely correctly. In other words, you earn credit for each assignment by putting forth the effort to complete it—as long as it is a solid effort, is mostly accurate, and earnestly attempts to answer the questions.

Do not do the assignment if you did not do the reading. It is obvious when I see it. The course portfolio is 30% of your grade, and it is expected that each assignment is complete and uploaded on time. You must save your portfolio on Sakai using the following title "**Date of class meeting_Topic_Your last name_Your first name.**" You can have only one version of this document uploaded to Sakai at any point in time. Keep a copy of your portfolio on your computer (and back-up your computer daily), add the next assignment, remove the previous version from Sakai, and upload new updated version being sure to rename the document as described above. There will be reading assignments for each class corresponding to the daily topic.

Illness Due to Flu: The nation typically experiences widespread influenza-like illness. If any of us develop flu-like symptoms, we are being advised to stay home until the fever has subsided for 24 hours. So, if you exhibit such symptoms, please do not come to class. Notify me of your status. We will work together to ensure that course instruction and work is completed for the semester. The Centers for Disease Control and Prevention have posted simple methods to avoid transmission of illness. These include: covering your mouth and nose with tissue when coughing or sneezing; frequent washing or sanitizing your hands; avoiding touching your eyes, nose, and mouth; and staying home when you are sick. For more information please view www.cdc.gov/flu or [flu.gov](http://www.cdc.gov/flu%20or%20flu.gov) <<http://www.cdc.gov/flu%20or%20flu.gov>>. URI Health Services web page, www.health.uri.edu <<http://www.health.uri.edu>>, will carry advice and local updates.