What are our class meeting times? →
Lecture: 211 (sections 03 & 04) Tues/Thurs 1215-130pm
  RITA 103
Discussion: D03 Tu 830-1130 am &
     D04 Th 830-1130 am
     RITA 271

Credits: Biology 211+Biology211D together 4 credit course.

Who is the professor? → Dr. Courtney Murren (she/her)
Where to contact me? → e-mail: murrenc@cofc.edu

Office: RITA new office 207; No office phone. Department phone: 843-953-5504
Office hours: Wednesday 2-3 pm and other times by appointment, please email.

This is an in-person course with engaged & interactive learning, please bring your laptop. The syllabus is subject to change as new campus-wide policies are announced. UPDATES will be announced and POSTED on Oaks.

What topics will we explore and develop together?

Instructional Objectives – COMMON to ALL BIOLOGY 211 SECTIONS

This course is intended to foster an understanding of the diverse ways that organisms interact with the environment, the fundamental principles of ecology, evolution, and conservation biology, and to learn about the three domains of biodiversity on Earth. More specifically as a student in this course you will

- review evolution, initially developed by Charles Darwin, and supported by modern data
- explore the modern synthetic view of evolution which integrates genetics, molecular biology and many other areas of biology into an explanation of how evolution occurs.
- explore mechanisms (or processes) of evolution including
  - how populations evolve at the genetic level (evolutionary genetics)
  - how new species arise (speciation)
- how biologists are revealing the way life diversified on earth and what the current “tree of life” looks like (systematics & phylogeny)
- explore the evidence in support of evolutionary theory and processes.
- explore the features of the diverse species that inhabit the planet to discover
  - the anatomical, physiological and behavioral associations between related groups of organisms
  - the contributions of the diverse groups of living organisms to ecological systems and human welfare
  - an astonishing variety of lifestyles, traits, and solutions to the challenges of life
- explore how populations change in abundance and distribution (population ecology)
- explore ecological interactions between species (community ecology)
- explore processes and changes that occur at the level of ecosystems
- apply evolutionary and ecological concepts and theories to issues related to the conservation of biodiversity on earth (conservation biology)

**Student Learning Outcomes**

At the end of this course, students are expected to be able to:

- describe the processes by which populations of organisms change in size
- explain the forces that lead to evolutionary change in populations and diversification among species
- interpret phylogenetic trees to comprehend the evolutionary relationships they depict
- discuss how interactions with the physical environment and with other organisms influence populations and communities
- build a foundation of knowledge about life’s diversity and its interrelatedness
- apply ecological and evolutionary principles to the conservation of biodiversity
- apply the following skills used by professional biologists: use primary literature, generate scientific questions and pose testable hypotheses, analyze data to evaluate hypotheses, use quantitative models to describe biological processes, and communicate these to a scientific audience.

**OUR SECTION**, we will learn skills transferable across sub-fields of biology (including medicine) through participation in a **CURE** (Course Based Research Experience)—where you are the scientist and participate in biological discovery. You will have the opportunity to co-author a biological manuscript being developed collaboratively with faculty and students at CofC and at 5 other institutions in the US. This occurs through the unPAK collaboration Professors Rutter, Strand and Murren run the program from CofC (arabidopsisunpak.org). Data collection is
occurring over several semesters. We will also participate in Community Science projects adding to global and local projects led by other scientists.

The first two thirds of the course are conceptual and quantitative in ecology evolution and conservation. We will graph, model, work with data, problem solve. Problem sets for practice with peers in class, and quizzes to develop these skills.

In the third section of the course, we will explore the diversity of life on the planet!

We will synthesize knowledge and build understanding of inter-relatedness of species. We will also talk about COOL CREATURES!

**What are the D sections?** ➔ **Discussion sessions:**
The discussion sections are where we build *science skills for your major and beyond!*

- We will build skills tools of how scientists (from medicine to ecology) do science.
- We will analyze data, communicate science, and write in many formats.
- Students will work both independently and in groups as scientists
  - skills of scientists to work respectfully with others and work effectively alone.

In the discussion sections, we will conduct research projects and practice science as scientists.

**Prerequisites** for this course include Biology 111, Biology 111L, Biology 112 and Biology 112L. Successful completion of these courses or transfer equivalents is required for enrollment in 211. Recommended pre/co-req. Math250 or equivalent. Suggested Math knowledge: through algebra or pre-calculus.

**Texts:** Biological Science 7th edition is the latest edition, available editions on campus are 6th edition or 5th edition.

**Required Equipment:** Laptop computer with audio AND video capabilities for discussion, Adobe Acrobat or other PDF reader, Access to Google Drive. **Headphones recommended.** Standard notebook, pens, pencils.

**Course Policies:**

**Lecture attendance:** Attendance in lecture will set you on the road to success in this course as we will be working on problems directly related to course content and the conservation, ecology and evolution themes of our discussion projects. Prepare ahead of class taking detailed notes on readings. During lecture, we will share examples from the recent literature, discuss ideas and work on real-science problems, work with others in breakout groups.

**Scientific Communication (Sci-Comm):**
Each student will sign up for a particular class-day for sci-comm
Post a link to a news article (full instructions will be on Oaks)
   We will start each class with ONE SLIDE summary of the news article
   Make connections to the global press
   Learn about ecological devastation and successes in sustainability and connection.

**Note-taking:** I consider note taking an important skill to develop as a student. I’ll provide tools and tips to help you succeed with this skill.

Problem sets are opportunities to build proficiency in the topics we are learning in the exciting world of ecology, conservation, and biodiversity. Quizzes have multiple attempts for learning and identifying areas of further review.

**Discussion attendance:** Discussion is a **required** component of this course, and participation is **mandatory**. Discussion will be a mixture of group work with your peers, field trips, and workshops, collaborative learning and presentations. As we are an in-person course, **do not schedule work-hours or other activities during our class-scheduled lecture or discussion**. We will be doing active hands-on work and breakout group work during our assigned class times. Over the last decade, students who miss more than 1 Discussion section do not pass the course. Student-Athletes, please contact me.

**BACK TO THE BRICKS** [https://cofc.edu/back-on-the-bricks](https://cofc.edu/back-on-the-bricks). Additionally, we will follow the guidelines on the CofC Back to the Bricks. Questions? Please email me.

Final exams times are designated by the registrar’s office see policy at:
[https://registrar.cofc.edu/calendars/#FES](https://registrar.cofc.edu/calendars/#FES)

**Computers:** All students are required to have computers. Have a Chromebook or iPad instead of a laptop? Let me know as **some software we will use requires laptop capabilities**. Need help accessing a laptop? All assignments will be required to be completed on a word processor. One assignment requires the downloaded desktop version of Excel, which is available for download from CofC IT, and one requires Image J a free-online image analysis system.

**Covid – We are STILL in a pandemic.** While CofC and the CDC may call it endemic – the virus is still impacting us, our families, and our friends. Many in the Charleston community have been ill over recent months. Please contact me in a timely way should you require accommodations due to COVID. Both Medical withdraw and incomplete (only appropriate at the end of the semester) require paperwork from faculty and students to submit together.

*If you miss 2 classes without communication with me, I will activate the campus-wide FAST system to activate additional campus help that you might need (financial, medical, and other student services).*

**Assignments and late policy:** Many projects are scaffolded such that assignments build upon each other. Turn in assignments on OAKS. Late work will be accepted, in the late work resiliency
folder. However, please note my return of graded work will likely delayed. Incentive: 5% late points fee for late work – this is encouragement to stay up to date. Meeting deadlines will help with success. In cases of missed work or emergency, communicate with me – we are humans.

What happens if Dr. Murren is ill? If I become ill, I will email you. If I am hospitalized or unable to teach, you will receive an email from the department chair Dr. Eric McElroy at your CofC email.

Class Courtesies:
You belong here. Each student registered for this course belongs here. Please show respect for their time, and ideas.

   - Be on time, put cell phones, watches and other devices that beep in silent mode, please mute other tabs and notifications on your machine.
   - Emergency during class, please slip out of the room and return when you are able.
   - We have a safety policy in the biology department. RITA 271 is a laboratory room. There is no eating, drinking or smoking/vaping in the laboratory or on laboratory field excursions. We will have a brief break during discussion for a sip of coffee or a granola bar in the hall.

!!!! Do study, do ask questions, do participate in class activities, be courteous and respectful to your colleagues. Bring your enthusiasm – it is contagious!!!!

Academic integrity: COFC Honor code brings respect to our campus, our degrees and to Cougar alumni.

Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when identified, are investigated. Each incident will be examined to determine the degree of deception involved.

Incidents where the instructor determines the student’s actions are related more to a misunderstanding will handled by the instructor. A written intervention designed to help prevent the student from repeating the error will be given to the student. The intervention, submitted by form and signed both by the instructor and the student, will be forwarded to the Dean of Students and placed in the student’s file.

Cases of suspected academic dishonesty will be reported directly by the instructor and/or others having knowledge of the incident to the Dean of Students. A student found responsible by the Honor Board for academic dishonesty will receive a XXF in the course, indicating failure of the course due to academic dishonesty. This grade will appear on the student’s transcript for two years after which the student may petition for the XX to be expunged. The F is permanent.

Students should be aware that unauthorized collaboration--working together without permission-- is a form of cheating. Unless the instructor specifies that students can work together on an assignment, quiz and/or test, no collaboration during the completion of the assignment is permitted. Other forms of cheating include possessing or using an unauthorized
study aid (which could include accessing information via a cell phone or computer), copying from others’ exams, fabricating data, and giving unauthorized assistance. Research conducted and/or papers written for other classes cannot be used in whole or in part for any assignment in this class without obtaining prior permission from the instructor. Students can find the complete Honor Code and all related processes in the Student Handbook at http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php

Plagiarism will result in a zero, potential failure an honor board referral.
Honor and respect your colleagues, ask for help from your professor, ask for an extension.
If you have questions on how to properly cite, paraphrase or document literature sources, consult me for assistance – please come to office hours or stay after class. I’m happy to help!

How can I be successful in this course?

Tips for success with lecture material- coming to class having already read the material as presented in the text, and reviewed notes from the previous class.
1) engaged participation with problem sets and group work in class
2) coming to class with questions
3) re-writing your notes from class including graphs and phylogenies, making flash cards
4) studying by setting up study sessions and actively quizzing a classmate
5) use textbook additional resources with additional quantitative problems
6) complete weekly quizzes on Oaks - take advantage of multiple attempts for learning

Students who succeed develop skills in learning how to study that matches their own personal style outside of the classroom.
I’m happy to help you develop new skills or suggest new approaches.
I’ll emphasize skills and approaches to help further develop good study/professional skills that go beyond the biology classroom and are important for a large variety of careers.

Communication:
Questions? Contact me → email, stay after class or stop by my student office hours.
I typically respond to emails questions w/in 1 day. Weekends, I will respond as soon as I can, and will see them on Monday.
I will use OAKS extensively to communicate and send all-class emails.

Connect with other students!
Networking with your classmates is excellent for science and life! Lifetime best friends have been made in this class! Successful sections in the past have built study groups in person, on zoom, via discord etc.

Mutual respect: Arrive on time, be polite to others, stay on topic, respect the scientists who conducted the scholarship. Respect opinions if they differ from your own. When in doubt, reply with kindness. Let’s be positive change-makers!
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday August 23 &amp; Thursday August 25, 2022</td>
<td>Welcome &amp; Introductions – Ecology of the planet in a changing world.</td>
<td>Ch 1</td>
</tr>
<tr>
<td></td>
<td>Introduction to Conservation Biology and Evolving Populations –</td>
<td>Ch 54, 22</td>
</tr>
<tr>
<td>Tuesday August 30 &amp; Thursday September 1, 2022</td>
<td>Evolutionary Mechanisms-- Natural Selection</td>
<td>Ch 22</td>
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<td></td>
<td>Population Genetics –</td>
<td>Ch 23, Bioskills 4</td>
</tr>
<tr>
<td>Tuesday September 6, and Thursday September 8, 2022</td>
<td>Evolutionary Mechanisms – Drift, Gene flow, Mutation</td>
<td>Ch 23</td>
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<tr>
<td></td>
<td>Evolution to Ecology –</td>
<td>Ch 49 &amp; 51</td>
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<tr>
<td>Tuesday September 13, and Thursday September 15, 2022</td>
<td>Population Growth and Human Ecology–</td>
<td>Ch 51</td>
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<td>Community Ecology and Competition –</td>
<td>Ch 52</td>
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<tr>
<td>Tuesday September 20, and Thursday September 22, 2022</td>
<td>Predation, Herbivory and Parasitism –</td>
<td>Ch 52</td>
</tr>
<tr>
<td></td>
<td>Parasitism, Mutualism and Communities —</td>
<td>Ch 52</td>
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<tr>
<td>Tuesday September 27 - EXAM I</td>
<td>Community Structure –</td>
<td>Ch 52 &amp; 54</td>
</tr>
<tr>
<td>Thursday September 29</td>
<td>Ecosystem Ecology —</td>
<td>Ch 49 &amp; 53</td>
</tr>
<tr>
<td>Tuesday October 4, and Thursday October 6</td>
<td>Biogeochemistry, Climate and Biogeography –</td>
<td>Ch 53</td>
</tr>
</tbody>
</table>
**Tuesday October 11, and Thursday October 13, 2022**  
Origins of Biodiversity and Phylogeny introduction –  
Readings: Ch 24, and Bioskills 13  
Phylogenetics and the History of Life –  
Readings: Ch 25

**Tuesday October 18, and Thursday October 20, 2022**  
The Domains of Life and Introduction to Bacteria —  
Abundant and Diverse – Bacteria – Archaea --  
Readings: Ch 26  
Bacteria and Archaea –  
Readings: Ch 26

**Tuesday October 25 and Thursday October 27, 2022**  
Eukaryotes and Protists –  
Readings: Ch 27  
Protists and Plants –  
Apicomplexans, Parabasalids and Others  
Readings: Ch 27, 28

**Tuesday November 1, 2022**  
Plants – moss, ferns  
Readings: Ch 28  

**Thursday November 3, 2022 – EXAM II**

Monday November 7 and Tuesday November 8 (Election Day) CofC Fall Break

**Thursday November 10, 2022**  
Gymnosperms & Angiosperms —  
Plants on Land -- Flowers  
Readings: Ch 28

**Tuesday November 15, and Thursday November 17, 2022**  
Fungi  
Readings: Ch 29, 30  
Introduction to Animals  
Readings: Ch 30

**Tuesday November 22**  
Animals: Diploblasts, Acoels and Protostomes  
Readings: Ch 30 and 31

Wednesday November 23 – Sunday November 27 CofC Thanksgiving Break
Tuesday November 29 and Thursday December 1, 2022

Protostomes and Deuterostomes
  Readings: Ch 31 and 32

Deuterostomes
  Readings: Ch 32

Reading Day December 6, 2022

**FINAL SATURDAY** December 10, 2022 **FINAL EXAM 1-3:00 PM**

**NOTE:** Discussion sections begin August 30, 2022

*The syllabus is subject to change. Any changes will be announced in class and via OAKS if there are campus closures due to weather and any other campus-wide policy changes. Discussion assignment submitted on OAKS in your Discussion section. Extra credit summaries in the lecture section. Weekly schedule will be posted on OAKS.*

**Important campus-wide dates:**
- Storm Make up dates (mark your calendars): Sept 24, 25; November 12, 13
  - If these storm-dates are used for CofC learning time, in this course we will employ asynchronous on-line instruction and learning.
- Last day to Add/Drop: August 29, 2022
- Midterm Grades campus-wide: October 13
- Last day to Withdraw: October 28
- Last day of classes: Dec 5 (M)
- Reading Day: Dec 6 (Tu)

**Biology 211 & Biology 211D are a 4 credit combined course.**
**Course requirements & Course Points**

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Class Exams</td>
<td>200</td>
</tr>
<tr>
<td>Final Exam (second half cumulative)</td>
<td>200</td>
</tr>
<tr>
<td>Quizzes (weekly on OAKS)</td>
<td>100</td>
</tr>
<tr>
<td>Discussion activities, in class assignments</td>
<td>75</td>
</tr>
<tr>
<td>Skill development assignments</td>
<td>75</td>
</tr>
<tr>
<td>Discussion Project 1 Community Science</td>
<td>100</td>
</tr>
<tr>
<td>Discussion Project 2 Arabidopsis EcoEvo</td>
<td>100</td>
</tr>
<tr>
<td>Discussion Project 3 Biodiversity local and global</td>
<td>75</td>
</tr>
<tr>
<td>Discussion Presentations</td>
<td>75</td>
</tr>
</tbody>
</table>

**Total points:** 1000 Pts

**Extra Credit**

A *maximum* of 4 campus-professional seminar presentations would count as extra credit. NOTE: These extra credits are a token to encourage general campus/civic scholarly involvement.

To receive credit, you must hand in a typed 5+ sentence summary of the seminar that you participated in which also includes a description of what you learned from this seminar and the connection to topic/s in our course. A seminar summary will be worth up to 3pts of extra credit.

Biology depart seminars are 12 on Mondays. Ft. Johnson Marine Seminars are 4 on Friday.

Extra credit for your first visit to my student office hours.

Alternative extra credit: Pick up plastic trash off the beach or park. Take a picture of you with your bag and upload onto OAKS. Properly dispose of the trash. Include a summary of the impact of plastic trash on the ecology of the beach or park including connection to course content (3 points)

See separate Discussion syllabus for weekly activities and assignments.
Campus wide Syllabi Statements

To complement the Policy on Course Syllabi 7.6.10. Relevant policy sections in parentheses.

Academic Integrity Statement (3.12):
Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when suspected, are investigated. Each incident will be examined to determine the degree of deception involved.

Incidents where the instructor determines the student’s actions are related more to misunderstanding and confusion will be handled by the instructor. The instructor designs an intervention or assigns a grade reduction to help prevent the student from repeating the error. The response is recorded on a form and signed both by the instructor and the student. It is forwarded to the Office of the Dean of Students and placed in the student’s file.

Cases of suspected academic dishonesty will be reported directly by the instructor and/or others having knowledge of the incident to the Dean of Students. A student found responsible by the Honor Board for academic dishonesty will receive a XXF in the course, indicating failure of the course due to academic dishonesty. This status indicator will appear on the student’s transcript for two years after which the student may petition for the XX to be expunged. The F is permanent.

Students can find the complete Honor Code and all related processes in the Student Handbook at: http://deanofstudents.cofc.edu/honor-system/studenthandbook/.”

Accommodations for Students with Disabilities (3.11; choose one):

1. Any student eligible for and needing accommodations because of a disability is requested to speak with the professor during the first two weeks of class or as soon as the student has been approved for services so that reasonable accommodations can be arranged. Center for Disability Services/SNAP.

2. The College will make reasonable accommodations for persons with documented disabilities. Students should apply for services at the Center for Disability Services/SNAP located on the first floor of the Lightsey Center, Suite 104. Students approved for accommodations are responsible for notifying me as soon as possible and for contacting me one week before accommodation is needed.

3. This College abides by section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. If you have a documented disability that may have some impact on your work in this class and for which you may require accommodations, please see an administrator at the Center of Disability Services/SNAP, 843.953.1431 or me so that such accommodation may be arranged.

OAKS (3.10, for all instructional modalities)
OAKS, including Gradebook, will be used for this course throughout the semester to provide the syllabus and class materials and grades for each assignment, which will be regularly posted.

**Inclement Weather, Pandemic or Substantial Interruption of Instruction (3.8)**
If in-person classes are suspended, faculty will announce to their students a detailed plan for a change in modality to ensure the continuity of learning. All students must have access to a computer equipped with a web camera, microphone, and Internet access. Resources are available to provide students with these essential tools.

**Recommended Syllabus Content**
*Optional statements related to Section 4.0 of the Policy on Course Syllabi 7.6.10.*

**Fall 2021 policy. F2F courses when students are quarantined/isolated due to Covid-19**
If one or more students are absent for an extended period of time due to COVID-19 (quarantine or isolation), instructors may, at their discretion, conduct the class exclusively online via OAKS for the duration of student quarantine/isolation, record class lessons to share with students, or choose an alternate accommodation that provides the impacted student(s) with the opportunity to continue in the course. The specific accommodation will vary depending on the number of students affected, the expected duration of their absence, and the needs of the class.

**Attendance Verification**
Only students officially registered (graded or auditing) for this course may attend class. During the week following the drop/add deadline, the professor will verify student enrollments in this course. Any student appearing on the class roll but determined not to have attended the class even once will be removed, except for cases where a student is absent because of quarantine or isolation due to COVID-19.

**Recording of Classes** (via ZOOM)
By attending and remaining in this class, the student consents to being recorded, should recording be necessary for instruction. Recorded class sessions are for instructional use only and may not be shared with anyone who is not enrolled in the class.

**Online Courses with Exam Proctoring**
This course will require the use of an exam proctoring service for the course exams. Students are responsible for registering, scheduling, and the cost of the service prior to each exam. Instructions and additional information on proctoring can be found at [https://online.cofc.edu/faculty-training-resources/index.php](https://online.cofc.edu/faculty-training-resources/index.php).

**Mental & Physical Wellbeing:**
At the college, we take every students’ mental and physical wellbeing seriously. If you find yourself experiencing physical illnesses, please reach out to student health services (843.953.5520). And if you find yourself experiencing any mental health challenges (for example, anxiety, depression, stressful life events, sleep deprivation, and/or
loneliness/homesickness) please consider contacting either the Counseling Center (professional counselors at http://counseling.cofc.edu or 843.953.5640 3rd Robert Scott Small Building) or the Students 4 Support (certified volunteers through texting "4support" to 839863, visit http://counseling.cofc.edu/cct/index.php, or meet with them in person 3rd Floor Stern Center). These services are there for you to help you cope with difficulties you may be experiencing and to maintain optimal physical and mental health.

**Food & Housing Resources:**
Many CofC students report experiencing food and housing insecurity. If you are facing challenges in securing food (such as not being able to afford groceries or get sufficient food to eat every day) and housing (such as lacking a safe and stable place to live), please contact the Dean of Students for support (http://studentaffairs.cofc.edu/about/salt.php). Also, you can go to http://studentaffairs.cofc.edu/student-food-housing-insecurity/index.php to learn about food and housing assistance that is available to you. In addition, there are several resources on and off campus to help. You can visit the Cougar Pantry in the Stern Center (2nd floor), a student-run food pantry that provides dry-goods and hygiene products at no charge to any student in need. Please also consider reaching out to Professor if you are comfortable in doing so.

**Recommended Syllabus Content (cont)**

**Inclusion:**
The College of Charleston offers many resources for LGBTQ+ students, faculty and staff along with their allies.

- Preferred Name and Pronoun Information
- On Campus Gender Inclusive facilities
- Campus Resources
- College of Charleston Reporting Portals
- National Resources for Faculty & Staff
- GSEC Reports
- Documenting LGBTQ Life in the Lowcountry (CofC Addlestone Library Special Collections Project)
- College of Charleston Quality Enhancement Plan (QEP)
- Articles about CofC and LGBTQ+ Issues
Statement on "Religious Accommodation for Students"
(Faculty/Administration Manual VIII.A.10)

The College of Charleston community is enriched by students of many faiths that have various religious observances, practices, and beliefs. We value student rights and freedoms, including the right of each student to adhere to individual systems of religion. The College prohibits discrimination against any student because of such student's religious belief or any absence thereof.

The College acknowledges that religious practices differ from tradition to tradition, and that the demands of religious observances in some traditions may cause conflicts with student schedules. In affirming this diversity, like many other colleges and universities, the College supports the concept of "reasonable accommodation for religious observance" regarding class attendance, and the scheduling of examinations and other academic work requirements, unless the accommodation would create an undue hardship on the College. Faculty are required, as part of their responsibility to students and the College, to ascribe to this policy and to ensure its fair and full implementation.

The accommodation request imposes responsibilities and obligations on both the individual requesting the accommodation and the College. Faculty members are expected to reasonably accommodate individual religious practices. Examples of reasonable accommodations for student absences might include: rescheduling of an exam or giving a make-up exam for the student in question; altering the time of a student's presentation; allowing extra-credit assignments to substitute for missed class work or arranging for an increased flexibility in assignment dates. Regardless of any accommodation that may be granted, students are responsible for satisfying all academic objectives, requirements and prerequisites as defined by the instructor and by the College.

### 2022 – 2023 Religious Holidays

<table>
<thead>
<tr>
<th>Date</th>
<th>Holiday</th>
<th>Religion</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 26 – October 4, 2022</td>
<td>Navratri</td>
<td>Hindu</td>
</tr>
<tr>
<td>September 26 – September 27, 2022</td>
<td>Rosh Hashanah(^2)</td>
<td>Jewish</td>
</tr>
<tr>
<td>October 4 – October 5, 2022</td>
<td>Yom Kippur(^2)</td>
<td>Jewish</td>
</tr>
<tr>
<td>October 10 – October 16, 2022</td>
<td>Sukkot(^2)</td>
<td>Jewish</td>
</tr>
<tr>
<td>October 17 – October 18, 2022</td>
<td>Shemini Atzeret(^2)</td>
<td>Jewish</td>
</tr>
<tr>
<td>October 24, 2022</td>
<td>Diwali</td>
<td>Hindu</td>
</tr>
<tr>
<td>February 22, 2023</td>
<td>Ash Wednesday (Beginning of Lent)</td>
<td>Christian</td>
</tr>
<tr>
<td>February 27, 2023</td>
<td>Eastern Orthodox (Beginning of Lent)</td>
<td>Orthodox Christian</td>
</tr>
<tr>
<td>March 21, 2023</td>
<td>Naw-Rúz</td>
<td>Baha’í</td>
</tr>
<tr>
<td>March 23 – April 20, 2023</td>
<td>Ramadan</td>
<td>Muslim</td>
</tr>
<tr>
<td>April 6 – April 13, 2023</td>
<td>Passover(^2)</td>
<td>Jewish</td>
</tr>
<tr>
<td>April 7, 2023</td>
<td>Good Friday</td>
<td>Christian</td>
</tr>
<tr>
<td>April 14, 2023</td>
<td>Good Friday (Orthodox)(^3)</td>
<td>Orthodox Christian</td>
</tr>
<tr>
<td>April 21 – 22, 2023</td>
<td>Eid al – Fitr</td>
<td>Islamic</td>
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</tbody>
</table>

\(^1\) The previously included Islamic holiday of Eid al-Adha falls outside the regular academic year and is therefore not listed here. Other religious holidays such as Hanukkah (12/19-12/26), Orthodox Christian Christmas (1/7), Sankranti (1/14) and Purim (3/7) fall outside of the semester class schedule (breaks and weekends) and therefore are also not listed.

\(^2\) All Jewish holidays begin at sunset on the evening before the date given.

\(^3\) Orthodox Christian holidays begin at sunset on the evening before the date given.
DISCUSSION SYLLABUS  
Biology 211D  
Fall 2022  
Dr. Courtney Murren (she/her)  
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Section D03 (Tuesday 830-1130am)  
Section D04 (Thursday 830-1130am)

Discussion section includes weekly in-class activities and longer-term research projects to accompany with major themes from throughout the course in Ecology, Evolution, Conservation and Biodiversity. Assignments will include both independent and group work. Please see lecture syllabus for additional information regarding course policies and points allocated to discussion activities and projects. The syllabus schedule is subject to change per weather, campus closures or other, amendments to the syllabus will be announced. Find materials for readings of papers on OAKS.

Student Learning Outcomes
At the end of this course, students are expected to be able to:

- describe the processes by which populations of organisms change in size
- explain the forces that lead to evolutionary change in populations and diversification among species
- interpret phylogenetic trees to comprehend the evolutionary relationships they depict
- discuss how interactions with the physical environment and with other organisms’ influence populations and communities
- build a foundation of knowledge about life’s diversity and its interrelatedness
- apply ecological and evolutionary principles to the conservation of biodiversity
- apply the following skills used by professional biologists: use primary literature, generate scientific questions and pose testable hypotheses, analyze data to evaluate hypotheses, use quantitative models to describe biological processes, and communicate these to a scientific audience.

There is a single grade for the combined discussion and lecture in Biology 211 (4 credits). Discussion is a mandatory component of the course. Need COVID accommodations please email me. Timely communication will help in planning and your learning.

Supplies for class: Laptop with MS Excel loaded, audio and video capabilities. Headset can also be helpful. MS Excel, word and power point are available through Office365 for CofC students at portal.office.com and entering your CofC email and MyCharleston password. Download and installation can take some time, please give yourself time for the install. Later in the semester we will be downloading professional image analysis software available free to universities.
What are our three major projects?

**Project 1: Community science:** Learning experimental design through ecological and evolutionary interactive projects. Contributing data to ongoing research efforts with data from our geographic area. Developing skills in science communication, including communication of data.

**Project 2 Evolutionary ecology of a model genetic organism: Arabidopsis EcoEvo:** Arabidopsis plants in response to environmental treatments. Skills developed: hypothesis development in ecological genetics and population genetic variation, data collection, metadata, statistics, graphing, literature search, written project in scholarly lab-report format, student authored datalines in public database for CURE (course-based research experience). Our goal with the next semester is a co-authored manuscript with all students who fully participate. More details on authorship responsibilities and opportunities in discussion. We will make plant measurements using image analyses techniques, and conduct research.

**Project 3 Biodiversity: Biological hotspots and local biodiversity:** Justification for conserving a biological hotspot. Local biodiversity observation skill development. Skills developed: building a biological argument, use of the primary literature for background research and citation, observations of biological diversity.

Assignments: Typed Discussion Questions (DQ): Hand in questions based on the reading. Some assignments will be due at the start of the discussion period as we will have presentations to be shared with the class, or we will be building on the project from a previous assignment. Details of projects and all associated handouts will be provided during discussion as Google doc files.

*Note, this schedule may change. Any updates to the syllabus will be announced!*

*Please see main syllabus for course and campus policies. See details regarding department safety manual on Oaks.*
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<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Discussion Activity</th>
<th>Due in Discussion</th>
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<tbody>
<tr>
<td>1</td>
<td>Tu Aug 30</td>
<td>Welcome Introduction to majors/minors in biology</td>
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<td>Th Sept 1</td>
<td>Asking biological questions (50 questions)</td>
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<td>How to write a discussion question</td>
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<td>Your journey as a biologist</td>
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<td>Urban ecology</td>
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<td>2</td>
<td>Tu Sept 6</td>
<td><strong>Project 1 Community Science:</strong> Introduction to community science (video, discussion, online projects)</td>
<td>Critical thinking: Hand in categorized biological 50 questions assignment</td>
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<td>Th Sept 8</td>
<td>Choose science activity</td>
<td>Read: Community Science articles on Oaks (DQ)</td>
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<td>Build a data collection plan and submit to instructor</td>
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<td>Introduction to library resources</td>
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<td>Plagiarism discussion, Primary literature exercise</td>
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<td>3</td>
<td>Tu Sept 13</td>
<td><strong>Project 1 Community Science:</strong> Workshop</td>
<td>Growth: Your journey assignment</td>
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<td>Th Sept 15</td>
<td>Meet with instructor to discuss community science data collection, also time to collect data with your team on campus</td>
<td>Critical thinking: Data collection for community science project</td>
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<td>Intro to PowerPoint practices</td>
<td>Communication: 1pg Writing – put library scholarly references to use</td>
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<td>4</td>
<td>Tu Sept 20</td>
<td><strong>Lightning talks:</strong> Answering a biological question (50 questions)</td>
<td>Communication: Conference talk style: Lightning talk Answering a question PowerPoint</td>
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<td>Th Sept 22</td>
<td>PowerPoint</td>
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<td>What goes into an introduction?</td>
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<td><strong>Project 1 Community Science:</strong> Touch base with community science team. Gallery walk of Community science findings &amp; Team build Draft presentation for next week.</td>
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<tr>
<td>Week</td>
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<td>Event Description</td>
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| 5    | Tu Sept 27 (exam) Th Sept 29 | **Project 1:** Group presentations of community science findings  
Dr. Jensen Ryan Zoom Chat. |
| 6    | Tu Oct 4 Th Oct 6 | **Project 2 Arabidopsis EcoEvo:** Introduction to *Arabidopsis*: collecting early life history plant data 17d, e-lab notebook & data management skills  
**Communication:** Written introduction for **Project 1 Community Science**  
Read *Arabidopsis* background material. Watch video; Install Image J |
| 8    | Tu Oct 11 Th Oct 13 | **Project 2 Arabidopsis EcoEvo:** Skills: Rosette data collection part 2 28d; Graphing rosette plant experiment data, refining hypotheses, gallery walk, build a data story  
**Data skills & critical thinking:** Graphing videos Bird dataset practice assignment part 1 |
| 9    | Tu Oct 18 Th Oct 20 | **Project 2 Arabidopsis EcoEvo:** Plant reproduction measurements, Discuss full project report, graphing *Arabidopsis* data at maturity.  
**Project 2 Arabidopsis EcoEvo:** draft of introduction |
| 10   | Tu Oct 25 Th Oct 27 | **Project 2 Arabidopsis EcoEvo:** Stats and Gallery Walk.  
**Data skills & critical thinking:** Graphing videos Bird dataset practice assignment part 2 |
| 11   | Tu Nov 1 Th Nov 3 (exam 2) | **BioDiversity Field trip:** College of Charleston Stono Reserve  
**Read:** Biodiversity Conservation paper (DQ) |
| 12   | Th Nov 10 Tu Nov 15 | **Project 2:** Arabidopsis EcoEvo Peer review  
Install iNaturalist, Intro to BioDiv hotspots  
**Communication:** Draft of Project 2 Arabidopsis EcoEvo lab report due for peer review |
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<th>Date</th>
<th>Project 3 Biodiversity</th>
<th>Communication</th>
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<tr>
<td>13</td>
<td>Th Nov 17</td>
<td>Biodiversity – hotspots and iNaturalist</td>
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<td>Tu Nov 22</td>
<td>Phylogeny: theory and practice</td>
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<td><strong>Project 3 Biodiversity:</strong> Project presentations</td>
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<td>Tu Nov 29</td>
<td>Dr. Jensen Ryan focus group chats</td>
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<td>Th Dec 1</td>
<td>Communication: Project 2 Arabidopsis EcoEvo Revised version due</td>
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<td><strong>Communication: Project 3 Biodiversity final project</strong></td>
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