# EEOB 5194 Syllabus

**Instructor Contact Information**:

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Bryan Carstens

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Office Hours: By appointment

**Course Coordinator**: N/A

**Meeting Days and Times**: Lecture, Wednesdays 10:20 am to 11:15 am; Outdoor Lab, Fridays 8:30 am to 12:30 pm

**Classroom Location**: Lecture, Cunz Hall 180; Outdoor Lab, various locations

**Course Number**: EEOB 5194

**Course Title**: EEOB 5194: Bioacoustics of Ohio I: Practical Bioacoustics in the Field

**Format of Instruction**: Lecture, Field Work

**Contact Hours per Week**: ~1 hours lecture, ~4 hours field work

**GE Course**: No

**Course Description**: This class will teach undergraduate and graduate students about the basics of Bioacoustic Ecology. They will learn how to record bird calls and other ambient sounds using recording equipment ranging from state-of-the-art parabolic microphone setups to cell phone recordings. The timeline of this course will allow for recording of most early- to late-migrating birds through Ohio, as well as year-round resident birds. Students will learn how to capture recordings and associated metadata, process these data for scientific study, upload these data into bioacoustics repositories at the Borror Lab, and present results. There will be a field component to this work, as students will be able to attend optional weekend or day-of field trips to locations such as the Stone Lab or Hocking Hills. These places include areas where songs were recorded approximately 50 years ago, but lack modern-day recordings. Students interested in performing bioacoustics data research about urbanization, song dialect development, and evolution in Ohio birds are encouraged to enroll in 2 credit hours of Undergraduate Independent Study (EEOB 3193) or a Graduate Seminar in Ecology (EEOB 8896.04) in SU 2022.

**Required Texts**: All texts will be provided free of charge to students as PDFs.

**Course Materials:**

Required and not provided by course: University iPads, bird guides, Field journals (see below), pencils

Optional: Cell phones, GPS units, cameras, binoculars

Loaner equipment: recording equipment

Bird guides: if you own a bird field guide (from EEOB 2200 or other sources: Sibley, Peterson, etc) you may use it. If not, we recommend downloading the Audubon app onto your phone, from <http://www.audubon.org/apps>.

Field journals: A field journal is required. We recommend a 4x7 Rite in the Rain, as they are waterproof and of good size for carrying around in the field.

Banned playback equipment: Please note that the use of playback equipment is banned during this course.

**Length and Format of all Papers, HW, Lab assignments, Exams**:

Weekly homework assignments: journal and field notes.

Recording deposition. Students will be expected to contribute a minimum of 30 cleaned recordings of at least 1 minute in length, with appropriate metadata. These recordings must be of a minimum of 10 species, must be spread across the entire recording period, and must be done across at least three locations more than 1 km apart. Extra recordings will be rewarded as extra credit.

Field trip: Attend at least one field trip.

Presentations: One final presentation per group of ~15 minutes in length accomplishing two goals: showing recording effort of the students and proposing hypotheses for song evolution that can use the recordings.

**Grading information with percentages per assignment**:

|  |  |  |
| --- | --- | --- |
| **Item (Number of Assignments)** | **Per Assignment** | **Total Points Possible** |
| Field Notes (7) | 28.6 | 200 |
| Lecture Participation (7) | 14.3 | 100 |
| Recordings (30) | 10 | 300 |
| Field Trip (1) | 200 | 200 |
| Final Presentation (1) | 100 | 200 |
| *Extra Credit Recordings (up to 100)* | *1* | *100* |
| **MAXIMUM** |  | **1000** |

**Scheduling of Exams and Assignment Due Dates**: There are no exams. Weekly assignments (field journals, recording check-ins) will be due by 11:59 PM the Wednesday following assignment.

**Evaluation of Student Performance**:

FIELD NOTES: Students must keep field journals, gaining research experience in a non-traditional classroom setting, setting them up for future academic career success. These field journal entries act as lab participation as well. (Turning in any field notes for a week, including the lb, is worth 5 points. The remainder is for evaluating the quality via the rubric.). Students will receive feedback from instructors on their field journals each week. The lowest field notes grade will be dropped. Field notebooks must be thorough and legible as they will partially be the basis of the data we will use in 3193/8896.04. We recommend you take photos of your field notebook after each excursion in case it gets lost. In addition you should transcribe your field data after every excursion.

LECTURE PARTICIPATION: Students are graded for participation and attendance of the lectures. (Being present in lecture will earn a student 5 points, and participating in discussions will earn a student the rest). Occasional absences will not be penalized if the instructor is informed of the absence ahead of time, no questions asked. The lowest participation grade will be dropped.

RECORDINGS: Students will be evaluated by whether or not they record sufficient numbers and localities of recordings. These will be uploaded to the BLB. Students will also be required to record on their own. Students will need to submit a minimum number of recordings throughout the semester. (Of the 10 points per recording, 3 points are for having a recording submitted and the remaining 7 are for recording quality via the rubric.) Recordings will partially be the basis of the data we will use in 3193/8896.04. Some proportion must be recorded using the recording equipment at the Borror Lab.

FIELD TRIP ATTENDANCE: Students must attend at least one of the field trips. No extra credit will be awarded for attending multiple field trips, but students are welcome to do so if space permits. Students will survey areas that songs were collected from ~50 years ago and document changes. Students will be assigned to groups to do this.

FINAL PRESENTATION: Students will give 5-minute presentations that summarize their recording effort as well as propose hypotheses to work on in EEOB 3193/8896.04.

EXTRA CREDIT RECORDINGS: We encourage students to take more recordings, as they and their metadata will be the basis of the data we will use in 3193/8896.04. If students do submit extra credit recordings, they must indicate which 30 are to be used for full grading, otherwise the first 30 submitted will be used. Students will only be given extra credit for the first 100 recordings submitted, but more recordings will be accepted into the BLB.

**Grading scale**: Letter Grades

|  |  |  |
| --- | --- | --- |
| **Percentage Range** | **Class Points** | **Letter Grade** |
| 93% | 9300 - 11000 | A |
| 90% | 9000 - 9299 | A- |
| 87% | 8700 - 8999 | B+ |
| 83% | 8300 - 8699 | B |
| 80% | 8000 - 8299 | B- |
| 77% | 7700 - 7999 | C+ |
| 73% | 7300 - 7699 | C |
| 70% | 7000 - 7299 | C- |
| 67% | 6700 - 6999 | D+ |
| 60% | 6000 - 6899 | D |
| 0% | 0 - 5999 | E |

**Course Specific Measurable Student Learning Outcomes**:

* How sound changes our understanding of the biological world
* Understanding and explaining how and why data is collected
* Appreciation for the scientific process and how much effort it takes
* Clearer understanding of how sensory modalities contribute to evolution
* Specific technical skills:
  + Use of recording equipment
  + Data archiving
  + Best practices for bioacoustics
  + Hypothesis development
  + Scientific record-keeping (journals)

**Attendance Policy**: Given the short nature of these courses, attendance is expected and required and is reflected in the participation grades for lecture, lab, and field trips. Occasional absences will not be penalized if the instructor is informed of the absence ahead of time, no questions asked, with make-up assignments offered.

**Weekly topical outline (topics, readings, homework)**:

Please note that topics are subject to change.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **Topics** | **Field Location** | **Field Trip** | **Assignments** |
| Week 1 March 2nd (W) March 4th (F) | Course Introduction  Course Safety  Recording Best Practices  Getting Around  Observing and Recording Natural History (observations, field notes) | OSU Campus |  | Field Notes |
| Week 2 March 9th (W) March 11th (F) | Spectrograms  Matching Songs to Spectrograms | OSU Wetlands |  | Field Notes  Paper Analysis |
| Week 3 March 16th (W) March 18th (F) | (Spring Break) | (Spring Break) | (Spring Break) | (Spring Break) |
| Week 4 March 23rd (W) March 25th (F) | Noise Pollution  Ohio 50 Years Ago | Green Lawn Cemetery | Hocking Hills State Park, WV | Field Notes  10 New Songs |
| Week 5 March 30th (W) April 1st (F) | History of Bioacoustics | Pickerington Ponds |  | Field Notes |
| Week 6 April 6th (W) April 8th (F) | Current Borror Lab Research | Prairie Oaks Metro Park–Darby Bend Lakes? | Stone Lab Overnight Trip | Field Notes  Paper Analysis  10 New Songs |
| Week 7  April 13th (W) April 15th (F) | The Scientific Process in Practice | Scioto Audubon Metro Park |  | Field Notes |
| Week 8 April 20th (W) April 22nd (F) | Final Presentations | Hoover Reservoir |  | Field Notes  All Songs Due by April 25th |

**Safe Return of Equipment:** There will be a check-out system for recording equipment. In order to check out equipment, we will require students to temporarily surrender their BuckID or their Driver's License to be returned when recording equipment is returned. In the event that a student does not return borrowed Borror Lab equipment by the final presentations, they will be referred to the Office of Academic Integrity and Misconduct. Note that this will not apply to broken equipment unless there is strong evidence of deliberate destruction.

**Student Evaluation of Courses:** Students will fill out evaluations upon completion of the course but before grades are sent out.

**Mask Policy:** All students, faculty and staff are required to comply with and stay up to date on all university safety and health guidance (<https://safeandhealthy.osu.edu>). For course specific requirements, see “Field Health and Safety.”

**COVID-19 Accommodations:** The university strives to make all learning experiences as accessible as possible. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university’s request process, managed by Student Life Disability Services. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

**Field Health and Safety:** EEOB 5194 has a field work component. As such, there are some risks associated with being outside. Students are always expected to behave in a safe and respectful manner and to follow any instructions the instructors give. Safety behaviors will be discussed in the first week of the course. However, there are some considerations to make:

* The course will take place during the spring, in which weather is unpredictable and can range from very cold to very warm. As such, you must dress appropriately for the weather, including for rain. Our recommendations include long pants (even in warm weather) and close-toed shoes.
* On hot days, students should bring a hat, water, and sunscreen.
* On rainy days, students should wear raincoats. Umbrellas are not recommended.
* Students must stay on trails when applicable to avoid dangers such as slips, falls, poison ivy, wild animals, or ticks.
* Students must be respectful of each other, of the instructors, and of the environment. This includes following safety guidelines.
* Students must not leave the group without explicit permission from the instructor.
* Unless university regulations have changed and masks are no longer required inside of campus buildings, students and instructors are expected to wear masks during all field excursions regardless of vaccination status. All students and instructors are expected to wear a mask to class and lab activities. We do not want to police this mandate and expect that all participants in the class will follow university guidelines. Failure to do so will result in crabby instructors.

**Academic Misconduct**: It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct <http://studentlife.osu.edu/csc/>.

**Disability Services**: The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

**Mental Health**: As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student’s ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life’s Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614­-292-­5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614­-292-­5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-­800­-273-TALK or at suicidepreventionlifeline.org.

**Sexual Misconduct**: Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at http://titleix.osu.edu or by contacting the Ohio State Title IX Coordinator at titleix@osu.edu

**Diversity Statement**: The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

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Description automatically generated with medium confidence