**Biology 272**

**CONSERVATION BIOLOGY**

**MWF 11-11:50 am**

**260 Rockwell Integrated Sciences Center**

**Fall 2023**

**Instructor: *Dr. Megan B. Rothenberger***

Pronouns: her/hers/she

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Office Hours: ***USUALLY*** Thurs 10-11 am & Fri 1-2:30 pm or by appointment if necessary (but typically not on Tuesdays, which I reserve for research and research students).

**WA:** Olivia Bamford, bamfordo@lafayette.edu

*\*You are required to meet with a WA for four thirty-minute sessions through the course of the semester (see below for more details).*

**Course Description and Objectives:** Conservation Biology includes aspects of molecular biology, ecology, environmental science, social science, and politics and draws on scientific evidence to make decisions about conservation of all forms of life. This course will provide you with an introduction to both the scientific basis of modern conservation biology and the application of these principles to conservation problems around the world. In order to understand the complexities involved in making conservation decisions, we will read from many sources, have class and small group discussions, and engage in debate and problem-solving activities. Because Conservation Biology and wildlife management are, more than anything, about the application of ideas to the solving of problems, the objective of the laboratory portion of this course is to provide students with practical, problem-solving experiences in conservation biology beyond the classroom. We will use class and field-based exercises and discussions to explore a wide range of conservation issues: biodiversity threats, population genetics, ecosystem restoration and management, sustainable development, and more.

**Student Learning Outcomes (SLOs):**

SLOs are simply statements that specify what you will know or be able to do after successfully completing a course. The SLOs in this course can be sorted into 3 groups – those that relate to application of **KNOWLEDGE** to solving conservation problems, those that relate to **WRITING SKILLS**, and those that relate to **COMMUNITY ENGAGEMENT AND SERVICE**. After successfully completing this course, you will be able to:

1. ***describe*** the ecological principles underlying conservation biology and the interdisciplinary challenges involved in carrying out conservation in the real world,
2. ***apply*** knowledge of concepts and quantitative skills learned in lecture and lab to ***design*** solutions to conservation problems,
3. ***demonstrate*** your understanding of how the diversity of life evolved over time by processes leading to genetic change and how the evolutionary process influences decisions made by conservation biologists,
4. ***use*** library resources and a coherent writing process including invention, organization, drafting, revising, and editing to form an effective final written product,
5. ***locate, summarize, and synthesize*** information from primary and secondary scientific literature and correctly incorporate citations into your writing projects,
6. ***use*** peer review, comments from the professor and other reviewers to improve your writing,
7. ***discuss*** (in a meaningful way) controversial issues with people who have different values or beliefs.
8. ***demonstrate*** that you have engaged in projects that enhanced the well-being of both the human and ecological components of our community.

**Course Materials:**

* **Optional Text:** *Essentials of Conservation Biology (6th ed.)* by Richard B. Primack
* **Lab Handouts:** There is no required lab manual. However, you will be given handouts or asked to print handouts from Moodle before lab, and any handouts that I provide during the lab or on Moodle are required material.
* **Additional Readings** (NOTE: these will be announced and posted to Moodle prior to related class discussions).

**Course Resources**:

* rothenbm@lafayette.edu is a way to contact me if you want to ask a question or make an appointment, although I would much prefer to interact with you in person.
* Lecture slides, supplementary course readings, and other information relevant to the course will be posted on Moodle, which you can access using your Lafayette Network ID (username) and password at <http://moodle.lafayette.edu>.

**Grading:**

* Your grade for BIO 272 will be determined by your performance in lecture AND in the laboratory. The lecture will count 60% of your grade, and the lab will contribute 40% of your grade. You must be registered and actively participating in the laboratory section. ***You must pass both the lecture portion and the laboratory portion in order to pass the class.***
* Lafayette requires all writing courses to assign ***at least*** 20 pages of process writing. ***Be prepared to do quite a bit of writing in this course!***
* You can earn 600 points in lecture and 400 points in the laboratory. Your final grade will be calculated by adding the total points you earned in lecture and the points you earned in lab for a total 1000 possible points.
* It is **YOUR** responsibility to keep track of your grades. If you want to know what your current grade is, simply do the math. The breakdown **for lecture points** is as follows:

|  |  |  |
| --- | --- | --- |
| **EVALUATION** | **POINTS** | **PERCENTAGE** |
| Quizzes | 5 @ 20 points each | 10% |
| Environmental Autobiography Draft 1 (for WA)\* | 25 | 2.5% |
| Environmental Autobiography Final Draft | 100 | 10% |
| Journal Article Summary & Critique Draft 1 (for WA)\* | 25 | 2.5% |
| Journal Article Summary & Critique Peer Review (for your partner) | 50 | 5% |
| Journal Article Summary & Critique Final Draft | 100 | 10% |
| Writing Portfolio\* | 100 | 10% |
| Class Participation (includes attendance + PBL activities – see below) | 100 | 10% |
| Lab (please refer to lab syllabus for a description of these assignments) | 400 | 40% |
| **TOTAL** | **1000** | **100%** |

\*Meeting with the **WA required.** (NOTE: the fourth writing conference will be on a lab assignment).

**QUIZZES:** Quiz dates are noted on the schedule posted to Moodle. The format will be multiple choice, true/false, and short answer questions.

**ENVIRONMENTAL AUTOBIOGRAPHY:** An environmental autobiography is much like a standard autobiography with one important difference: The focus is on places and how they have shaped who you are and how you view the world. For this assignment, you will be reflecting on a memorable experience you’ve had in a setting or landscape significant in your life or definitive of your identity. You must turn in both a rough draft and final draft of this assignment for credit. Please refer to the documents on Moodle for further instructions for this assignment. You may be wondering what this assignment has to do with conservation biology. Don’t worry. I will explain in class.

**JOURNAL ARTICLE SUMMARY AND CRITIQE:** Choose an empirical study in conservation biology, most likely from either *Conservation Biology* or *Biological Conservation* (both available as electronic resources through the Lafayette Library Catalog). By empirical, I mean an original study that gathered observational or experimental field data on some problem in biological conservation (as opposed to a review, or an article that presents a new theoretical concept or model). Once you’ve chosen your paper, you will need to do the following:

1. ***Paper Rough Draft:*** After carefully and critically reading your article, you will write a paper, summarizing and critiquing what you have read. In the first part of your paper, your job is to explain the **substance** of the study so that one of your peers in the class would gain a better understanding of the research than they would have been able to get from reading only the article’s abstract. In particular, you should describe the results from the study (i.e., the patterns in the data) in enough detail so that someone reading your summary would be able to “see” the patterns, based on your verbal description, without having to look at the figures and tables from the article itself. In the second part of the paper, you need to **constructively critique** the article, highlighting the strengths and weaknesses of the study’s experimental design and conclusions. Finally, you must make suggestions to improve the experimental design and for potential future directions for the study. *You will need to use at least 2 additional valid references to support your arguments. Your critique should not be longer than 5 pages. Finally, you will need to turn in a copy of the article’s abstract with your rough draft………………………………..………..*…..……...….……………25
2. ***Peer Review:*** You will receive feedback about your draft version of this assignment from another student in the class, chosen at random (by me), in the form of a letter. Your review letter must be typed. You will also discuss your writing assignment and peer review in person with your partner....……………………………………..…....50
3. ***Paper Final Draft:*** After considering ALL the feedback you’ve received on your first draft, you will revise the paper and resubmit………....….................................100

***You can find additional details on the format and specific requirements of this assignment on Moodle.***

**WRITING PORTFOLIO:** At the end of the semester, you will create a portfolio of your work to represent you as a writer participating in the discipline of conservation biology. Everything you write this semester is eligible for inclusion in your portfolio. This includes the environmental autobiography, journal article critique, peer review letter, debate oratory, field journal entries, or any other writing you generate from your own questions and reflections on concepts and issues in conservation biology. Because the portfolio is intended to be consciously and carefully selective, you should choose only 3-5 pieces of your writing to include in a revised form. Finally, you will write a reflective essay which creates your portfolio by integrating the pieces in the collection into a whole.I will provide more specific information regarding your writing portfolios toward the end of the semester.

**CLASS PARTICIPATION & ATTENDANCE:** Participation ***means regular attendance and active engagement in class discussions and PBL activities.*** Please refer to the sections below for a description of my expectations regarding attendance and respectful class discussions. ***A portion of your participation grade will be based on the quality of the solutions turned in by your group for PBL activities completed during class, as well as your contribution to problem-solving.*** Any PBL activity listed in red on the syllabus will be collected and evaluated for effort and thoughtfulness (i.e., not necessarily for whether you got the “correct answer”). The quality of our sessions depends a great deal on the level of preparation students bring to the class. It is important that students complete the readings on time, reflect on them and be ready to engage in a discussion. Expression of students’ questions and opinions plays an important role in making class a stimulating experience for everyone. There is a strong distinction between attendance and participation. ***Attending every class, without ever speaking up, does not constitute participation.***To receive full credit for participation, students are required to adhere to the discussion guidelines established by the group (see below), ask questions, raise issues, express opinions, and respond to questions. Here are some guidelines for evaluating students’ class participation:

1. ***Basics:***Does the student demonstrate a sensitive understanding of the assigned material?
2. ***Creativity:***Did the student come up with some interesting ideas or questions for all of us to consider? Did the comments take opposing arguments into consideration?
3. ***Comparative aspect:***To what extent were the readings previously discussed during this course considered for the materials presently under review?
4. ***Argumentation:***How well was evidence used to support the claims?
5. ***Flow of discussion:***Did the student offer comments that encouraged others to participate? Were the comments useful in keeping the discussion on track?

Class attendance is expected. If you miss a class, you must get notes from a classmate. I do not supply copies of my notes. You may miss 2 classes without being penalized because we all have other obligations pop up or rough days. However*,* ***each additional unexcused absence will likely result in a loss of 10 points from the class participation component of the grade****.* If something is going on, please come and talk to me. Even though you may miss 2 classes without being penalized, you are still responsible for turning in assignments when they are due (see schedule below) *unless* you provide me with persuasive evidence demonstrating your inability to complete assignments on time. There will not be make-up quizzes unless extenuating circumstances arise and you provide me with persuasive evidence in an extremely punctual fashion. Otherwise, you will receive a mark of zero for the missed quiz. The make-up quizzes will be different from those taken by the rest of the class. For the quizzes, particularly, be present and on time. If the College is closed for any reason on the day of a scheduled quiz, that quiz will be given in the next regularly scheduled class.

**“Oops Tokens”**: We all make mistakes or have unexpected challenges that throw us off our game. ONE time during the semester, you can email me and use your Oops Token. Think of this as a “lifeline” or “get out of jail free” card. During this ONE-time submission of your only Oops Token, you can request that I 1) drop your lowest quiz grade or 2) provide you with a one-week extension on a final writing assignment or lab journal submission. The Oops token cannot be used for an extension for rough drafts, the peer review letter, or the debate performance (though, you could use it for an extension on the final debate paper). Oops Tokens hold no value – I encourage you to use it!

**Writing Associates (WA) and Writing Conferences:** Please keep in mind the following ground rules for working with your WAs:

* WAs function as trained, intelligent, critical readers of work-in-progress, not as graders, proofreaders, or editors.
* You MUST meet with a WA four times during the semester. Planning to meet five to seven days before a project’s due date usually leaves sufficient time for conferences. The time and place of your meeting is between you and your WA. ***However, I will NOT accept final papers that have not been reviewed by a WA (i.e., you receive a “0” on the final assignment if you don’t show up for your scheduled meeting).***

**Diversity, Inclusion, and Equity Statement**

This classroom is an inclusive space for all students. One of my goals as your instructor is to make sure that the background and perspective of every student is appreciated and respected, regardless of the individual’s race, ethnicity, gender, social class, sexual orientation, religion, political affiliation, ability level, or learning style. I am committed to providing an atmosphere for learning that respects diversity and inclusion, as well as promotes equity by removing any educational barriers in our classroom. While we are working together to build a classroom community of scholars, I ask each of you to:

* Share your unique experiences, values, and beliefs
* Be open to the views of others
* Honor the uniqueness of your colleagues
* Appreciate the opportunity that we have to learn from each other
* Value each other’s opinions and communicate in a respectful manner
* Keep class discussions confidential when they involve personal reflections from your colleagues

**Guidelines for respectful class discussions:** Given that class discussions/group problem-solving are core components of this course and that we are committed to an inclusive learning environment, we will develop a set of guidelines for class discussion together in the beginning of the semester. These guidelines will be posted to Moodle as a record of our agreement.

**Special needs:** Students with special classroom or testing needs should contact me as soon as possible so that appropriate accommodations may be arranged. Students must register during the first two weeks of the semester with the Office of the Dean of the College for disability verification and for determination of reasonable academic accommodations. If you are unsure about what constitutes special needs, contact the Office of Disability Services in 302 Hogg Hall at 330-5098.

**Academic Integrity Policy:** Academic dishonesty is defined as cheating of any kind, including misrepresenting one’s own work, taking credit for the work of others (including that of a fellow student) without crediting them and without appropriate authorization, and the fabrication of information. In case of doubt, please consult the “Principles of Intellectual Honesty” in the Student Handbook and feel free to discuss your concerns with me and/or reference librarians. Your continued enrollment in this course is your agreement to abide by this policy. Baseball caps may not be worn during exams/quizzes, nor may any electronic devices be used.

**Hints for success:**

* Attend every class whenever possible.
* When you are confused, always assume the best and ask for more information. Don’t make assumptions.
* Read your text/assigned papers and take notes BEFORE coming to class (e.g., write down the key concepts, learn vocabulary, and copy any major diagrams into your notes to bring to class).
* Re-write/transcribe your notes by formulating your own questions and answers to study for quizzes.
* Realize that if I write it on the board, display it on the screen, or demonstrate it in class, it is probably important.
* Begin your writing assignments *at least* one week ahead of time by brainstorming or making an outline. Get help from a peer, from your WA, or from me when you’re struggling.
* Keep up with the work and reading for the course – try not to get behind.
* For group problem-solving assignments, work together and consider the strengths of each person in your group.
* Come see me during office hours if you’re having problems. SOONER IS BETTER THAN LATER!!!!

**PLEASE NOTE:** The course syllabus serves as a contract between the instructor and the students. Your continued presence in the class beyond the first lecture signifies that you understand and accept the course policies on attendance, demeanor, exams (including excused absences and the make-up exam) and grading.