**Biology 272**

**CONSERVATION BIOLOGY**

**MWF 10:00 – 10:50 am**

**117 Kunkel Hall**

**Fall 2017**

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

Office: 15 Kunkel Hall

Phone: 330-5459 (office)

Email: rothenbm@lafayette.edu

Office Hours: ***USUALLY*** Mondays 4 – 5 pm, Tuesdays 11 – noon, Thursdays 9 – 10 am, Fridays 10 – 11 am, or by appointment if necessary (but typically not on Wednesdays).

**WA:** Karla Talley, talleyk@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, 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. 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 lab- and field-based exercises and discussions to explore a wide range of conservation issues: genetic analysis, population biology, ecosystem restoration and management, sustainable development, the public policy process, 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 **KNOWLEDGE** of conservation biology and evolution, 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 Required Readings:**
	1. Allendorf, T.D. and K. Allendorf. 2012. What every conservation biologist should know about human population. *Conservation Biology* 26: 953-955.
	2. Myers, N., R.A. Mittermeier, C.G. Mittermeier, G.A.B. da Fonseca, and J. Kent. 2000. Biodiversity hotspots for conservation priorities. *Nature* 403: 853-858.
	3. Norton, B. 1988. Commodity, ammenity, and morality: the limits of quantification in valuing biodiversity. Pages 200-205 *in* E.O. Wilson, ed. *Biodiversity*. National Academy of Sciences, Washington, D.C.
	4. Excerpt from Leopold 1949 *A Sand County Almanac*
	5. Keesing, S. and R.S. Ostfeld. 2015. Is biodiversity good for your health? *Science* 349: 235-236.
	6. Jablonski, D. 2004. Extinction: past and present. *Nature* 427: 589.
	7. Jackson, J.B.C. et al. 2001. Historical overfishing and the recent collapse of coastal ecosystems. *Science* 293: 629-638.
	8. Zimmer, C. 2013. Bringing them back to life. *National Geographic*.

**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 75% of your grade, and the lab will contribute 25% of your grade. You must be registered and actively participating in a laboratory section. ***You must pass both the lecture portion and the laboratory portion in order to pass the class.***
* The Curriculum and Educational Policy Committee (CEP) at 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 750 points in lecture and 250 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. The final breakdown is as follows:

|  |  |  |
| --- | --- | --- |
| **EVALUATION** | **POINTS** | **PERCENTAGE** |
| Quizzes | 6 @ 20 points each | 12% |
| 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) | 25 | 2.5% |
| Journal Article Summary & Critique Final Draft | 100 | 10% |
| Presentation | 100 | 10% |
| Presentation Annotated Bibliography | 25 | 2.5% |
| Presentation Questions | 10 | 1% |
| Writing Portfolio\* | 120 | 12% |
| Class Participation | 100 | 10% |
| Lab (please refer to lab syllabus for a description of these assignments) | 250 | 25% |
| **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 on pp. 8-9. The format will be multiple choice, true/false, and short answer questions. One of the quizzes will include information from student presentations.

* **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 natural setting. 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.
* **JOURNAL ARTICLE SUMMARY AND CRITIQE:** Choose an empirical study in conservation biology, 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. I will not accept your critique paper if it is longer than 5 pages. Finally, you will need to turn in* ***3 copies*** *of your rough draft (i.e., one for me, one for the WA, and one for your peer reviewer), as well as* ***3 copies*** *of the abstract of your article on 10/4………..*…..……...….……………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....……………………………………..…....25
3. ***Paper Final Draft:*** After considering ALL the feedback you’ve received on your first draft, you will revise the paper and resubmit **1 copy** of a final version on 11/13.….....................................................................................................................100

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

* **STUDENT PRESENTATIONS:** You will work with a small group of 2 to 3 fellow students to put together a presentation on a current topic in conservation biology. Your presentation should summarize **what is known** and **what is being done** with respect to the conservation of a specific organism, or with respect to a particular conservation problem that is not species-specific. You should describe the major **unanswered** questions about the organism or system, or the principal current **barriers** to success. Please refer to the document on Moodle for topic ideas and further instructions for this assignment.Questions regarding the information learned during these student presentations will appear on quiz #4 (so, take notes!). The points for this project will be broken down as follows:
1. ***Presentation:*** A 15 to 20-minute oral presentation teaching the class about your topic; each team member should talk for an equal amount of time; also be prepared to answer any questions that I or your classmates may have following your presentation………………………………………………………………..100
2. ***Annotated Bibliography:*** A properly cited list of at least 5 VALID references supporting your presentation along with annotations for each reference. Annotations are *usually* a paragraph of about 4-6 sentences.See provided handout for examples of valid references, proper citation format, and instructions for writing annotations...……………………………………………………..…..25
3. ***Questions:*** 5 potential quiz questions that you feel your classmates should be able to answer after listening to your presentation……………..………………..10

***You can find project ideas as well as 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, presentation (slides or written description), 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 middle of the semester.
* **CLASS PARTICIPATION:** Participation means regular attendance and active engagement. Please refer to the section below for a description of my expectations regarding attendance. Participation includes listening carefully, thoughtfully, and respectfully to what others have to say and responding accordingly. 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 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 his/her 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?
* Please keep all evaluated material until final grades are turned in and understand that you are responsible for knowing your grade at all times.
* Approximate grading scale:

 **A+ = 100%**

 A = 93%-99%

1. = 90%-92%

B+ = 87%-89%

 B = 83%-86%

1. = 80%-82%

C+ = 77%-79%

 C = 73%-76%

 C- = 70%-72%

 D = 60% - 69%

F < 60% in EITHER lecture or lab (you must earn at least 450 points in lecture **AND** 150 points in lab in order to pass the course!!!)

* Extensions for out of class assignments are only given due to extreme circumstances. You must contact me before the due date, if possible, or within 48 hours afterwards.
* *THERE IS NO EXTRA CREDIT, SO PLEASE DO NOT WASTE YOUR TIME ASKING!!!!* If you cannot manage the regular assignments, you do not have time for extra.

**Attendance:**

* 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. However, each additional unexcused absence will result in a loss of 10 points from the class participation component of the grade.
* 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 documentation demonstrating your inability to complete assignments on time.
* There will not be make-up quizzes unless extremely extenuating circumstances arise and you provide me with persuasive documentation 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.

**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).**

**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, nor may any electronic devices be used.

**Commitment to an Inclusive Learning Environment:** It is my intent that students from diverse backgrounds and perspectives be well served by this course, that students’ learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.

**Hints for success:**

* Attend every class.
* 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 one of your WAs, or from me when you’re struggling.
* Keep up with the work and reading for the course – try not to get behind.
* 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.