

INSTRUCTOR - Dr. Tom Langen: tlangen@clarkson.edu, phone 268-7933, office/lab Science Center 163, 170G
OPEN OFFICE HOURS: Mon 2:00-4:00, Wed 2:00 – 3:00, Fri 3:00-4:00 in Science Center 163, 170G
TEXT: There is no text. Instead, weekly readings will be posted on Blackboard, under assignments.
MEETINGS: Mon – Wed – Fri @ 1:00 – 1:50 PM in Science Center 342

COURSE OBJECTIVES: Conservation Biology is a new, eclectic field in applied environmental science. The goals of conservation biology are to understand how human activities imperil biodiversity, and how applied science can be used to reduce ecosystem degradation and risks to the continued existence of species. In BY328, I have the following objectives: (1) You learn the basic conceptual framework of conservation biology, and how it can be used to make informed decisions about real-world conservation problems. (2) You understand why conservation-biology is called a 'value-laden' science, and how sound science can be conducted in a matrix of conflicting values and policy goals. (3) You learn how to analyze the impact of actual policy and management practices on biodiversity. (4) You become familiar with the most important conservation issues affecting biodiversity in the St. Lawrence - Adirondack regions.

LECTURES: Lectures will be illustrated (usually) by PowerPoint presentations. These pages will be made available by the morning of the lecture for printing before class. However, THE NOTES ARE NO SUBSTITUTE FOR ATTENDING LECTURE. Attendance is expected- if you must miss class, please submit a note with the date and excuse for my records.

Lecture notes will be placed on the web at Blackboard. I will provide instructions on how to enroll and use Blackboard.

HOMEWORK EXERCISES: You will be required to do a number of homework exercises, which will be collected and graded. These exercises are designed to help you acquire the quantitative and analytical skills necessary for conservation practice.

READINGS: It is essential to read the assigned material to do well in this course. The assigned papers complement the lectures, often providing essential background. I will include a mix of primary research papers and review papers; the papers will be posted on Blackboard. Some will be easy and quick reads, some will be difficult and require some careful scrutiny. I will use assigned readings in class discussions, and they will provide the basis for some exam questions.

EXAMS: All exams are take-home written exams. They are 'open book' and include material from the lectures, readings, discussions and videos. Generally, you will have one week to complete them. While you may use any materials, you may not consult with any members of this class or students who have taken this class in the past. Forbidden acts include asking someone where to find material in the readings or course notes, asking someone to explain some notes that are unclear to you, ask someone to clarify the meaning of a question, looking over someone's answers on an exam from a previous semester etc. If you are going to share notes, do so BEFORE I distribute the exam. If you have any questions about the exam, promptly contact me.

Requests for regrades must be submitted *in writing* within one week of receiving the graded exam. A grading key will be posted, please refer to it before making a regrade request that is not due to clerical error (i.e. I added the points incorrectly). Exams cannot be made up except under extraordinary circumstances. Discuss any conflict with me ASAP.

POLICY ANALYSIS PAPER: You will work with a group of 2-3 students on a twenty-page policy analysis paper and ten minute oral presentation. The Policy Analysis will focus upon one major St. Lawrence / Adirondack conservation policy controversy – I will provide a list of options. I have an extensive library of materials from which you can borrow, but I also expect you to look for information yourself. I will distribute the guidelines on the project and create the groups during the third week of class.

GRADES: The grades will be based on (1) two midterm exams (15% grade per exam); (2) one final exam (30% grade); (3) one group term paper and oral presentation (20% of grade); and (4) homework exercises and participation (20 % of grade). Course grades are calculated by converting the points earned within each category to the proportion of possible points, then multiplying that proportion by its weighting. For example, if the first midterm is worth 150 points, and you receive 125 points on it, when figuring your final course grade I will calculate: $(125/150) * 0.15$. It is possible, if you do extra-credit, to get credit for more than 100% of the possible points of a category. Grades will be based on a percentage of the total points, scaled to meet the above breakdowns: 90% or greater = A, 86-89% = B+, 80-85% = B, 76-79%=C+, 70%-75% = C, 66-69% = D+, 60-65% = D, 59% or less = F. However, I reserve the right to curve down (lower the grade cutoffs) if I judge it warranted.

COURSE COMMUNICATION: I will post announcements on Blackboard. I will also update the syllabus from time-to-time. Grades will be posted on Blackboard. I will contact by email, using your Clarkson email account. Be sure to use your Clarkson account, if you want to receive your messages.

MISC. POLICY: I teach on all days that classes are in session – in other words, I do not cancel classes before or after midterm breaks, nor do I schedule makeup exams to accommodate students' travel plans. You are responsible for the consequences of missing class.

I take a serious view of cheating, forbidden collaboration, and plagiarism on exams and assignments. You will be asked to sign a class Honor Code statement. If I do detect cheating by you, you will receive a zero on the exam, paper or homework assignment, and your name will be submitted to the Clarkson University Academic Integrity Committee.

Tentative Semester Schedule

| <i>WEEK</i> | <i>DATE</i> | <i>TOPIC</i> | <i>Due Dates</i> |
|-------------|-------------|---|--|
| 1 | 1/13 | What is Conservation Biology? | |
| 2 | 1/16 | Foundations of Conservation Biology | |
| | 1/18 | What & Where is 'Biodiversity'? | |
| | 1/20 | What & Where is 'Biodiversity'? | |
| 3 | 1/23 | What & Where is 'Biodiversity'? | |
| | 1/25 | Causes of the Biodiversity Crisis | |
| | 1/27 | Causes of the Biodiversity Crisis | |
| 4 | 1/30 | The Environmental History of the St. Lawrence / Adirondack Region | |
| | 2/1 | Calculating the Value of Biodiversity | |
| | 2/3 | Calculating the Value of Biodiversity | |
| 5 | 2/6 | The Problems of Species & Habitat Conservation | |
| | 2/8 | Conservation Genetics – Population Structure | |
| | 2/10 | Conservation Genetics – Phylogeography | |
| 6 | 2/13 | Break! | |
| | 2/15 | Conservation Genetics – Phylogeography | |
| | 2/17 | Conservation Genetics – Managing Small Gene Pools | First Midterm Distributed |
| 7 | 2/20 | Conservation Genetics – Managing Small Gene Pools | |
| | 2/22 | Demography of Small Populations | |
| | 2/24 | Spatial Structure and Small Populations | |
| 8 | 2/27 | Spatial Structure and Small Populations | First Midterm Due in Class |
| | 3/1 | Population Viability Analysis – Analyzing Species Recovery Plans | |
| | 3/3 | Invasive Species | |
| 9 | 3/6 | Invasive Species | |
| | 3/8 | Overexploitation | |
| | 3/10 | Overexploitation | |
| 10 | | Spring Break | |
| 11 | 3/20 | Overexploitation | |
| | 3/22 | Alteration of Biogeochemical Cycles, Toxification | |
| | 3/24 | Alteration of Biogeochemical Cycles, Toxification | Second Midterm Distributed |
| 12 | 3/27 | Conservation of Habitat & Landscape | |
| | 3/29 | Habitat Loss, Alteration & Fragmentation | |
| | 3/31 | Habitat Loss, Alteration & Fragmentation | Second Midterm Due in Class |
| 13 | 4/3 | Edge Effects | |
| | 4/5 | Optimal Reserve Design | |
| | 4/7 | Optimal Reserve Design | |
| 14 | 4/10 | Disturbance & succession | |
| | 4/12 | Restoration ecology | |
| | 4/14 | Restoration ecology | |
| 15 | 4/17 | Ecosystem Management | Group Presentation |
| | 4/19 | Ecosystem Management | Group Presentation |
| | 4/21 | Case study in ecosystem management: Guanacaste National Park | Group Presentation |
| 16 | 4/24 | Case study in ecosystem management: Adirondack State Park | Group Presentation |
| | 4/26 | Case studies in ecosystem management | Group Presentation |
| | 4/28 | Course Wrap-up | Group Presentation |
| 17 | | Final Due 4:00 PM Thu May 4 | Distribute Midterm Term Paper Due Final Due |