**Syllabus**

**Flying Fox Conservation Biology in Mauritius**

**BIO 232**

**Block 5, 2019**



**INSTRUCTOR**

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**Meeting times:** Varies, but every day throughout the trip 1/14/18 to 3/6/18, with free time interspersed.

**Required readings**

As assigned and needed for group projects. Readings will come from the conservation biology and conservation policy literature and from travel guidebooks.

**Course description**

This course is designed for students in biology and environmental studies interested in learning about conservation of the coastal ecology of Cabo San Lucas, Mexico. In this course, students will be introduced to ecological principles on the population, community and ecosystem levels. We also will explore wildlife management issues, assess human impacts on wildlife, and investigate ways that wildlife and people live together. Students have an opportunity to contribute new data that answer environmental problems and will be used by local managers and international decision-makers for conservation of threatened species. The course participants will be given the opportunity to publish findings as co-authors in an international wildlife conservation journal.

Course objectives

My goals for this course include the following:

* to investigate biological concepts and apply them to conservation in Mauritius
* to cultivate reading and writing skills within the scientific literature
* to strengthen students’ critical thinking skills
* to impart a conservation ethic with respect to the environment
* to provide an opportunity for hands-on learning using field and lab techniques
* to deepen students’ sense of Mauritius and tropical ecology by tying this course directly to local biology

Students will become familiar with Evolution, Biodiversity and Ecology and how they apply to conservation.. Specifically, we will study:

* differences and similarities among taxonomically related species
* factors that influence the distribution and abundance of organisms
* ecosystems and biological communities of subtropical forests within Central America
* how organisms interact with and affect each other
* the relationship between habitat and population sizes
* the relationship between people and threatened species and populations

*This course supports the* ***Educational Priorities and Outcomes of Cornell College*** *with emphases on knowledge, inquiry, reasoning, communication, ethical behavior, citizenship, vocation, and well-being.* These *Educational Priorities and Outcomes* can be found in the Academic Catalogue

*Knowledge*: The course will introduce you to ecological concepts using examples from international case studies.

*Inquiry and reasoning:* My goal is to guide the class in developing and conducting three inquiry-based projects supporting conservation of threatened species in Mexico. In the process, we will read and critique the peer reviewed literature in biology and gain a background on different approaches to biological study.

*Communication*: Students will work independently or in small groups to develop their own biological research projects. For these projects, students will collaborate with each other as well as Mexican students and faculty to develop their project ideas, conduct primary research, and present their project results to the group in both oral and written form. Students will be asked to lead in-class discussions and be prepared to ask questions in lectures, guest lectures, and discussions led by their peers.

*Ethical behavior*: As members of the global ecosystem ourselves, we will discuss and practice environmental conservation ethics. We will also be holding class while immersed in a different culture, which requires an understand and sensitivity to local cultural practices and rules. Students are expected to learn about Mexican cultural traditions on their own prior to arrival in Mexico, so they can tailor their behavior, dress, and expectations appropriately.

*Citizenship and vocation*: Students will learn how the research they are conducting informs conservation of natural resources in a highly biodiverse country with immediate conservation research and management needs. Meeting local protected area managers and the students and staff from local universities will provide rich opportunities for cultural and idea exchange, as well as examples of international career opportunities in conservation bioogy.

*Well-being:* Exploration and recreation outside have been linked to greater creativity and a sense of well-being. We will spend at least half of each day outside either in the field conducting surveys, or exploring the communities we will be visiting. The objectives of this class include exploring Mexico. Students are expected to embrace learning about Mexico, Mexican people, and conservation in Central American subtropical forests, while also learning about themselves as they travel and explore a new place.

**Website:** We will be using Moodle as our course website. Travel blogs will be posted on the Cornell College off-campus studies facebook page and on the Cornell College website.

**Class Format:** This class will be largely field based and focused on data collection. In our interactions with collaborating universities, there will be some introductory lectures to be sure everyone understands the research we are conducting and the application fo the results to conservation.

STUDENT-LED DISCUSSIONS will provide students with a way to present material they learned about their study topics and engage classmates in discussion about the material. Each student/group will be asked to lead a discussion/present material at least twice this block.

CLASS PROJECTS for this class will be to conduct biological studies of flying fox ecology and conservation on isolated tropical islands. Independently, or with a couple of partners, each student will choose a question to study, collect data, analyze and interpret data, and make suggestions for further research and conservation. A large part of each student’s final grade will be based on the project report, but the main goal of the course is to expose you to real world conservation problems, so do not worry too much about picking the “perfect” topic. There are a lot of suitable studies you can pursue.

FIELD WORK will include data collection in at least 5 different ecosystems. It will be up to each project group to develop data sheets, organize data collection, and be sure all necessary information is collected from each survey for their project.

**Class participation:** A substantial part of your grade and most of your success in this class will be based on your ability to prepare for field work and contribute to discussions. In classes like this with group projects, participation is of utmost importance.

**Assignments:**

**BLOG** Each student will prepare a travel blog to present on Cornell College’s Off-campus studies’ program’s facebook page. The blogs will be pre-assigned, such that a new blog is being posted every day while we are away. The blogs will consist of 1-4 photos, as well as a narrative section of no more than 500 words long. The topics covered in the blog are largely up to the student, but should focus on our most recent activities (so not to overlap with other posts) as well as a personal account or reflection on what the student is experiencing or learning. The blog should include ample reflection on previous things learned in a course or courses at Cornell. ((This is the intra-disciplinary bit that ties into other things you have learned at Cornell. Examples could be a comparison of previous countries visited to Mauritius. Or, things learned in a number of related disciplines: e.g. Philosophy, Sociology, Pyschology, Anthropology, History, Economics, Geology all can be easily related to conservation biology.))

**SCIENTIFIC PAPER DISCUSSION** Each student will lead a discussion about a relevant paper on flying fox biology and local ecology in Mauritius. The papers must come from the scientific literature (i.e. scientific journals) and should focus on a topic of the student’s choice (ideally, related to the student’s block project). Ideally, pdf’s of the papers should be made available to students ahead of time, so that students may print the papers before the course trip. However, given that our course is starting on the first day of the block, you may choose your paper once we are in the field, in which case, we can find a way to print in country.

**BLOCK PROJECTS** Students will be responsible for cooperating in the research on a topic related flying fox ecology and conservation biology on Mauritius. These projects will include: 1) a review of the literature and what is already known to develop the introduction, 2) a methods section (including a data sheet) outlining the specific research activities that will be conducted, 3) research in the field, 4) and the presentation of the study results in oral and written formats, including your recommendations for future research and management. You may work on complimentary projects in groups of 2, but each student is expected to have a unique block project and turn in their own paper.

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| **Course Grading** | **Total** |
| Class participation (instructor review) | 20 |
| Assignments (2, 20 pts each) | 40 |
| In-class presentations on research project  (2, 20 pts each) | 40 |
| Project Report | 50 |
|  | 155 |

Grades will be based on your % of total points in the class: A > 90%; B > 80%; C > 70%; D > 60%; F < 60%

I reserve the right to weigh in on final grades when performance much exceeds or falls much short of what a student’s total score reflects. I do give + and – for scores near to the cut-off.

**Course Policies**

Cornell academic policies can be found in *The Academic Catalogue* <http://www.cornellcollege.edu/registrar/catalogue-course-info/catalogue.pdf>

**Attendance Policy:** Attendance will not be recorded, but I expect everyone to be at all field work and all scheduled discussion times. Students are individually responsible for all information presented in lectures, guest lectures, field work, and readings.

**Field Work:** There will be a lot of field work during this course. Be ready to work as a team and independently to collect measurable data supporting the development of your block project topic.

**Computer accounts:** I expect to communicate with you electronically and expect you to use computers for lab work. This requires that you have a computer account with Cornell. If you do not have one, please get one today. If this is a problem for you, please talk to me, but my policy is to use no other accounts for e-mailing my students. The College’s policy states that electronic communications are as official as written communications and that you are expected to check your email daily when you are on campus.

**Mobile Phone Policy:** Mobile phone use is disruptive to both your own, your fellow students learning, and my teaching. No use of mobile phones will be permitted in discussion times or during field work. If you are using your phone for any reason during these times, points will be removed from your participation grade with no questions asked and we may ask you to leave. Multiple violations will result in a reduced grade.

**Email Policy:** Face-to-face discussion about the course and any problems or questions you may have will always be more beneficial than an email. The main use of email in this class should be to request a meeting outside of the normal office hours of myself and teaching assistant. Like you, instructors get many, many email messages a day. Please understand that email response times may be slow at times. As always, remember that email messages to course instructors should be more like letters than text messages. Please use full sentences and English writing style with no spelling mistakes, a CLEAR subject line that CLEARLY identifies the COURSE CODE [i.e., Subject: BIO 285 question], and a clear, concise question. If I receive a message that is poorly worded or not understandable, I will not answer it.

**Students with disabilities:** Students who need accommodations for learning disabilities must provide documentation from a professional qualified to diagnose learning disabilities. For more information see [www.cornellcollege.edu/disabilities/documentation/index.shtml](http://www.cornellcollege.edu/disabilities/documentation/index.shtml) Students requesting services may schedule a meeting with the disabilities services coordinator as early as possible to discuss their needs and develop an individualized accommodation plan. Ideally, this meeting would take place well before the start of classes.

**Academic Honesty:** Trust between student and instructor is of paramount importance in academic settings. Academic dishonesty will not be tolerated in the classroom. Cornell College expects all members in the Cornell community to act with academic integrity. An important aspect of academic integrity is respecting the work of others. A student is expected to explicitly acknowledge ideas, claims, observations, and data of others, unless generally known. When a piece of work is submitted for credit, a student is asserting that the submission is her or his work unless there is a citation of a specific source. If there is no appropriate acknowledgement of sources, whether intended or not, this may constitute a violation of the College’s requirement for honesty in academic work and may be treated as a case of academic dishonesty. The procedures regarding how the College deals with cases of academic dishonesty appear in *The Catalogue*, under the heading “Academic Honesty”.

**Dropping/Adding:** Any student may drop for any reason during the first three days of class. To drop on the 15th day, you must have "made a determined effort to master the material and to participate in class" (see the Catalog). This involves a minimum of regularly attending class, turning in all assignments, and participating as a member of the team in all aspects of the trip and field project. (Probably not applicable!)