**Syllabus:**

**BIO 485 – Monarch Butterfly Conservation**

**Block 1, 2018**



**INSTRUCTOR**

**Tammy Mildenstein** West Science 108A Phone: 319-895-4494 (office); 406-214-1563 (cell)

Email: [tmildenstein@cornellcollege.edu](mailto:tmildenstein@cornellcollege.edu) Office Hours: before or after class, or by appointment

**Meeting times:** Monday, Wednesday, Friday (prairie surveys, 8:30 – 1:00 pm, but times vary)

Tuesday and Thursday 9:00 – 11:00 AM, 1:00 – 3:00 PM West, Room 307

**This is a research-focused course, designed to give students time to develop and carry out their own capstone research projects. Our central theme will be monarch butterfly conservation, and we will conduct habitat restoration for monarchs on Cornell College’s campus. To further support monarch conservation, students will conduct their own research to answer questions about monarch threats and conservation.**

My goals for this course include the following:

* to investigate ecological concepts on local and global scales
* 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 opportunities for hands-on learning using field and lab techniques
* to deepen students’ sense of place by tying this course directly to Iowa ecology

*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 conservation ecological concepts using examples from local, national, and international case studies.

*Inquiry and reasoning:* My goal is to guide the class in developing and conducting a conservation-focused project on a nationally threatened species. In the process, we will read and critique the peer reviewed literature in ecology and gain a background on different approaches to ecological study for conservation management.

*Communication*: Students will work to develop their own ecological research project to build on what is known about butterflies in Iowa. For this project, students will develop a proposal for their study, present 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 local ecosystem ourselves, we will discuss and practice environmental conservation ethics.

*Citizenship and vocation*: Students will take part in conservation service projects within the local community, which will include working with Non-Governmental Organizations, and government agencies, as well as meeting with professional biologists and managers engaged in conservation-focused activities.

*Well-being:* Being in and learning about nature provides opportunities for clean air, recreation, and tapping into a spiritual connection with the natural world, where human presence is unneeded.

**Readings and Textbook:** The main book we will be working through for this class is: Monarchs and Milkweed: A migrating butterfly, a poisonous plant, and their remarkable story of coevolution;  by Anurag Agrawal

Throughout the block there will be required readings to help foster student and group projects. Any required journal readings will be placed on the course website before lectures.

**Website:** We will be using Moodle as our course website: BIO 485. Once you are registered for the course, you can login to access lectures, assigned readings, and other course documents.

**Class Format:** This class will make use of student-led discussions, student projects, a small group project, and some field trips to impart important principles of ecology and provide opportunities to get involved in a meaningful way.

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

Our GROUP PROJECT for this class will be to study butterfly habitat. Students will design individual research questions. They will use data collected over the past three field seasons, as well as data they collect themselves to investigate the relationship between an independent variable of their choice and monarch presence. Students are expected to work on their individual projects >5 hours/day on survey days as well as enter data, and progress toward analysis and interpretation of their results. On non-survey days, students should work on researching their topics and writing up their results.

STUDENT PROJECTS will be up to each student, but should support the central theme of the course: butterfly conservation. Students can decide the focus of their studies, conduct the field work, analyze their results, and write up their research papers for publication.

**Class participation:** In classes with a cooperative group project, participation is of utmost importance. A substantial part of your grade and most of your success in this class will be based on your ability to prepare for class and contribute to discussions. Because you will be working in small groups, your peers will also be asked to weigh in on your participation grade, and you will be asked to rate your peers.

**Student projects:** Students will be responsible for researching an aspect of butterfly ecology. These projects will include: 1) a review of the literature and what is already known, 2) a proposal of what needs to be studied and how that research should be conducted, 3) research in the field, 4) and the presentation of the study results, including your recommendations for future research and management.

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| **Course Grading** | **Total** |
| Class participation (instructor/peer review) | 50 |
|  |  |
| Student led discussion | 15 |
|  |  |
| Student project – discussion facilitation | 15 |
| Student Project – proposal presentation | 15 |
| Student Project – written proposal | 25 |
| Student Project – Final presentation | 15 |
| Student Project – Final paper | 50 |
|  | 185 |

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

**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, because your desire to learn will dictate your presence. Students are individually responsible for all information discussed in meetings times. In the case of medical or family emergency (e.g., legitimate, planned absences) I will work with the student individually in terms of rescheduling due dates, etc. **Formal health care documentation will be required for legitimate health care issues.**

Habitual tardiness or multiple absences will negatively affect your participation score. If you know you are going to be late or miss a class, please inform me beforehand. If you are sick, you must obtain documentation from the health center in order to get an excused absence or a health withdrawal. If you do not need medical attention, you still need a note. If you are late for a field trip, expect to be left behind.

**Field Trips:** Most of those days will include lunch in the field. Please bring a backpack and a highly portable lunch (a sandwich or granola bar and an apple in a backpack with some water will fare better than almost anything in a “clamshell” or very soft foods like bananas!) Dress appropriately! That means long pants and

closed-toed shoes (preferably boots). I strongly recommend long sleeves and a hat. Rain gear is also a good idea, even if rain is not predicted.

**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 class. If you are using your phone for any reason during class you will be excused until the next break. Multiple violations will result in reduced grades for the class.

**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 485 question from student X].

**Office Hours:** Meeting with professors can be a useful way to overcome obstacles to learning, understand key concepts, and improve your learning experience. Please come see me, if you have any questions. My office hours are times when I am usually in my office or around West Science somewhere. Feel free to just drop in during these times. But, if you really need to meet with me, it is a good idea to make an appointment in advance.

**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.