

Botany/Zoology 450: Midwestern Ecological Issues: A Case Study Approach
(Summer 2024)
2 credits

SYLLABUS

I. GENERAL INFORMATION

Botany/Zoology 450 is taught online (remote, asynchronously) from May 20th – June 16th, 2024

Login at: <https://canvas.wisc.edu/> using your UW NetID and password.

Instructor: Brandon Corder (he/him)
University of Wisconsin-Madison, Department of Botany
Birge Hall, Room 156 bcorder@wisc.edu

Grader: Bing Li (she/her)
University of Wisconsin-Madison, Department of Botany
bli283@wisc.edu

Office Hours: For Brandon, virtually (Zoom) by appointment

Enrollment requirements: BIOLOGY/BOTANY/ZOOLOGY 152, BIOLOGY/BOTANY 130, (BIOLOGY/ZOOLOGY 101 and BIOLOGY/ZOOLOGY 102), BIOCORE 381, or instructor permission

Required texts: None

Overview: In this 4-week online course, you will be introduced to ecological issues of special importance to the United States Midwest and Great Lakes. You will explore the science behind these issues and learn to think critically about approaches for addressing them.

Course Structure: This course has four-week long modules consisting of online lectures (30-60 min each), required readings, and optional readings. Each lecture will be accompanied by a short few-sentence reflection as a participation component. At the end of each module, there is a short online open-note quiz. There are three short, guided activities corresponding roughly to the first three modules and three discussion-based posts. Our final project consists of the creation of a flyer or poster on an ecological issue of your choosing and best practices or approaches to the issue.

Content and Schedule:

Module 1) Environmental and Cultural History of the Midwest

- 1.1 Natural History of the Midwest I: Geology and climate of the Midwest
- 1.2 Natural History of the Midwest II: Ecoregions and natural communities
- 1.3 Pre-colonization patterns of land use and indigenous land stewardship
- 1.4 The development and exploitation of natural resources in the Midwest I
- 1.5 The development and exploitation of natural resources in the Midwest II

Discussion 1: Introduce yourself!

Activity 1: iNaturalist observations and reflection

Module 2) Modern Land Use and Biodiversity Loss

- 2.1 Disrupting natural disturbance regimes
- 2.2 Habitat fragmentation, roads, and biodiversity loss
- 2.3 The origins, consequences, and control of invasive species
- 2.4 Terrestrial invasive species
- 2.5 Deer and the effects of deer overabundance

Discussion 2: Observations on local ecological and land use history

Activity 2: Research an ecological issue (Final Project preparation)

Module 3) Water Resources in the Great Lakes Basin

- 3.1 Water resources of the Midwest
- 3.2 Patterns of water use in the Midwest
- 3.3 Aquatic invasive species
- 3.4 Agriculture, eutrophication, and water quality
- 3.5 Case Study: Bad River watershed

Discussion 3: Being Wild: A reflection on wilderness and nature

Activity 3: "Surf" your watershed

Final Project (Part A): Peer review

Module 4) Climate Change Impacts in the Midwest Region

- 4.1 Climate change: An introduction
- 4.2 Biological responses to climate change
- 4.3 Climate change impacts on agricultural productivity
- 4.4 Climate change impacts on water resources

Final Project (Part B): Final flyer

Other course info:

Lectures and Readings: Virtual lectures and video content are organized into ~2-3 hours of content per module, located in the **Modules** tab of Canvas. One module will be open at a time and students may navigate through it at their own pace. Module lectures, post-lecture questions, and quizzes should be completed by the end of that module week (Sunday evening). Copies of the required and optional readings can be found in the **Modules** or **Files** tab of Canvas.

Quizzes: Each module will culminate in a short online quiz, accessible in the **Modules** or **Assignments** tab of Canvas. Quizzes are open-note and only allow for one submission. Quizzes will be posted on Wednesday and remain open through Sunday evening and may be taken at any time within that period. There will be no final exam in this course.

Activities: Activities are accessible via the **Modules** or **Assignments** link on the course home page. Activities will guide you through a list of instructions aimed at allowing you to explore some of the concepts of the class more personally. In some cases, activities will require you to go outside to the world around you. It is not necessary for you to be in the Midwest for these activities. If you have issues accessing any activity, please contact Brandon.

Discussion: In our course, Discussions will act as reflections and opportunities to engage with your classmates on ecological issues and topics. Discussions have two components: your entry and replies to posts of your classmates; see the instructions on the individual discussion in the **Discussion** tab of Canvas for more details.

Final Project: Your final project for the course is to develop a digital “flyer” presenting a specific ecological problem and a framework for mitigating its impact, written for a public/general audience. The final project has two components: the first is a draft version that includes the identity of the issue, its ecological significance and status. The second component is the finalized digital flyer.

Email and Communication: By enrolling in the course, you are automatically part of the course mailing list. Please check your email and the course announcements page regularly.

Expectations and Grading: As a 2-credit class, the expected workload is approximately 30 total hours over the 4-week period in direct contact with course content, plus additional “out-of-class” hours working on assignments and studying. Grades will be based on student performance as evaluated via points accumulated from assignments, quizzes, and online discussions. Each item is weighted as follows in your final grade:

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| Post-lecture questions | 10% |
| Quizzes (4) | 20% |
| Activities (3) | 20% |
| Discussions (3) | 20% |
| Final project | 30% |

Grading scale: A = 92-100%, AB = 88-91.9%, B = 82-87.9%, BC = 78-81.9%, C = 70-77.9%, D = 60-69.9%, F = <60%

Late Assignments: If you will be missing class time for travel or sickness, please notify the instructor to arrange appropriate accommodation. Late assignments without prior notice will have a half letter grade (5%) penalty for each day submitted late, capped at a 50% total penalty.

You are encouraged to keep track of your progress and your grades. Your grades for assignments, quizzes, and discussions will be posted within one week after the due date. You can access your grades through the **Grades** link on the course home page.

System Requirements: You must have an active UW email account to take part in this course. All messages regarding the course schedule and assignments are sent out to your UW email or posted directly on the course home page.

You also must have access to the internet and a computer capable of running a suitable browser, including Firefox, Chrome, Safari or Internet Explorer. We recommend you update Flash plug-ins in your browser to minimize problems viewing content. You also need Adobe Acrobat to view PDF files. If you have any issues viewing course content, please contact the DoIT Help Desk or Brandon.