

**UST 259: Natural History of Cleveland**

***Instructor: Justin Glanville***

***Office Hours: By Appointment***

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***Fridays at 12:25 p.m. beginning Sept. 1***

**COURSE DESCRIPTION**

This course is designed to introduce students to the natural history of the Cleveland metropolitan area. General geology, ecology, flora, and fauna of the Cleveland area; field trips to parks and museums to study local rock formation, forest types, and plant and animal identification will be included. This course is designed primarily for non-science majors and includes a laboratory component (field trips).

This course will focus on the characteristics of Ohio land, climate, and water, along with the natural landscapes present within the region, and finally we will examine the impact of humans on the region. We will use an interdisciplinary approach to explore spatial, geological, ecological, and physical aspects of the region.

**COURSE GOALS**

A primary objective of this course is to improve understanding of Ohio's unique heritage and the complex factors that have influenced and created its natural history, along with the sustainability measures that are needed to protect the area's future.

A second objective of this course is to create a participatory environment, through the laboratory component of the course and in-class exercises, where students can experience and see first-hand northeast Ohio's rich natural heritage. Both course readings and field trips will encourage greater appreciation and improved conservation/ resource management of our environment for both current and future generations. Students will gain practical experience in use of the scientific method in hypothesis testing and deductive reasoning.

*Talk to the Instructor as soon as possible if you are having trouble keeping pace with the class.*

**By participating in this course, the student is expected to gain a better understanding of:**

- **Past and present state of the ecology of Northeast Ohio**
- **Geological and glacial history of the region**
- **Relationship between natural cycles and patterns and the influence of humans on the region**
- **Introduction to the scientific method and its applications**

### **GENERAL EDUCATION STATEMENT**

This course is approved as a General Education 08 course meeting the requirements for the natural science breadth of knowledge. Skill areas for this class include critical thinking, writing to learn and writing to communicate.

#### **Skill Area: Critical Thinking Criteria**

1. This course requires that at least 15% of the student's grade in the course is based on an evaluation of critical thinking.
2. This course requires students to attain skills beyond lower-level knowledge, thereby requiring skills that involve the use of content knowledge (e.g. finding information to solve a problem).

#### **Skill Area: Writing**

1. Designate that at least 15% of the student's grade in the course is based on an evaluation of writing.
2. Include writing assignments that directly relate to the course goals.
3. Include instruction in writing-to-learn and/or writing-to-communicate. While writing-to-learn emphasizes the student's experience, writing-to-communicate highlights the reader's experience. Both are necessary to produce a thoughtful text that observes academic writing's conventions.
4. Require that students write a total of 2,000 words (8 pages, double-spaced, in 12-point font, with 1" margins) in multiple assignments.
5. Assign writing throughout the semester.

# **COURSE FORMAT, ASSIGNMENTS, AND GRADING**

## **COURSE FORMAT/ ATTENDANCE**

Although this class may include lectures, multi-media presentations, field trips, guest speakers, class discussion, and group exercises, an emphasis will be placed on “active learning” techniques that cultivate a high level of student involvement. As such, **regular attendance is required and is essential to success in the course.** Unless otherwise specified on the syllabus or assignment sheet, you will need to attend class – and show up on time – to receive full credit for all assignments. Please inform the Instructor in advance of missing a class (by phone or email.)

## **ASSIGNMENTS/GRADING**

Satisfactory performance will need to be demonstrated in the writing assignments in order to receive a passing grade for the class. All writing assignments must be submitted double-spaced, using standard 1” margins. All assignments **must be submitted via Blackboard.**

Students are expected to complete the following assignments:

- ✓ Complete assigned readings each week, and take **in-class quizzes** on the material.
- ✓ Complete a final 8-page research paper and a final 10-minute oral presentation, following (guidelines below), as well as one take-home assignment requiring a visit to the Cleveland Museum of Natural History.
- ✓ Late assignments will lose points. **NO** assignments will be accepted more than one class period past their due date unless you make special arrangements with me.

## **FIELD TRIPS**

This course includes field trips to nature centers, parks, and museums over the course of the semester. A part of this will include outdoor hikes up to 2-3 miles. Please dress appropriately in proper footwear and clothing for the weather! **Students are also responsible for finding their own transportation to and from the field trip locations.** I strongly encourage you to carpool to save gas and money. I will help to coordinate this during class.

## **FINAL PAPER & PRESENTATION**

You will turn in both a final paper and give a final presentation. You will apply what you’ve learned throughout the semester to **a natural place of your choosing.**

You should choose a place that is designated as a park or natural area -- not your backyard! You want the place to be large and natural enough that you will observe changes and differences over time, but not so large that you can’t walk the whole area each time you visit. For example, you might choose a particular area or trail in a Cleveland Metropark or the Cuyahoga Valley National

Park. City parks are fine as long as they're large and natural enough to make the kinds of observations described below.

## **Final Paper**

Points: 50.

The final paper will be 8 pages, double spaced, Times New Roman 12 point with 1" margins.

The paper should include the following content pertaining to your place. You should use only complete sentences. (Bullet points are fine but should be accompanied by descriptive text in complete sentences.)

### **Here are the elements you should include:**

#### Background

- Prehistory (through European settlement, including any Native American settlement)
- History
- Cover any human impacts (e.g., was this a farm, industrial site, virgin forest, etc.)

#### Geologic and Hydrologic Context

- What evidence of glaciation exists in your place?
- What is your place's physiographic region?
- What are the soil type and characteristics?
- Watershed and subwatershed?
- Description of any bodies of water/wetlands (rivers, streams, lakes, ponds, bogs), any impoundments.

Species Inventory - what animal and plant species did you see? A few sentences each about the characteristics of each species. What else might live here that you haven't actually seen?

- Flora (trees, flowers, grasses, etc.)
- Fauna
- Name and describe at least 5 flora, 5 fauna

#### Threats/Conservation Issues

- Water Quality
- Stormwater
- Pollution
- Note: For this section you will need to **interview at least one primary source**. E.g. ranger, naturalist, engineer, councilperson, planner or other expert. This person doesn't need to have specific knowledge of your site; you could describe characteristics and have that person advise.

#### Recommendations for Improvement

- At least three. You should consult with your expert on this, too.

#### Works cited page

Should include your primary source and at least three secondary sources (websites, articles, etc.)

- ✓ When using internet sources during your research, only choose those which are reputable and scholarly. **DO NOT copy and paste passages from sources you find on the Internet without attribution. This is plagiarism, and is grounds for an automatic 'F' grade on the paper.**
- ✓ If it can't be found in the CSU library, it probably isn't a good source.
- ✓ For example, an online version of an article from the American Planning Association (APA) is a good source, but a citation from jennifersthoughts.blogspot.com is probably a terrible source for research information!
- ✓ WIKIPEDIA is also NOT an academic source.

Your grade will be based on quality of content, strength of sources and quality of writing.

### **Final Presentation**

Points: 50.

Length = 5 to 10 minutes

The presentation is essentially a visual, spoken version of your Final Paper. In addition to touching on all the elements outlined for your paper, it should include the following visual elements:

- Photos (at least 5) - take them yourself. Do not copy them from the Internet.
- Site Map with Landmarks
  - You draw it or create it on computer. Do not use a pre-existing site map -- you must create it yourself, perhaps using tools such Google Earth or Google Maps, or free-drawing.
- Optional: Include a video tour of your place. If you do a video, it should be no more than 5 minutes long.

**\*Put as little text on your slides as possible. Reading from text-heavy slides is incredibly boring. If you need notes, make your own on notecards or paper.\***

Your presentation will be given a single grade based on the following elements:

You will be graded on the following elements:

- **Content** - strength of your material, 50 points
- **Presentation Style** - strength of your presentation skills, ability to engage the class, 30 points
- **Visuals** - strength of your visual materials (see below), 20 points

**YOUR FINAL GRADE IS BASED ON THE FOLLOWING ASSIGNMENTS:**

<u>Assignments</u>	<u>Points</u>
Attendance	100 points
Exam	100 points
Final Paper	50 points
Final Presentation	50 points
In-Class Assignments and Class Participation	50 points
Quizzes on Readings	50 points
Natural History Museum Assignment	<u>20 points</u>
Total Points Possible:	420 points

**Grading scale** is as follows:

A	92.51—100
A-	89.51—92.50
B+	87.51—89.50
B	82.51—87.50
B-	79.51—82.50
C+	77.51—79.50
C	69.51—77.50
D	60—69.50
F	< 60

**\*NOTE\*: This syllabus, and the course assignment due dates, are subject to change at the Instructor's discretion. You will be notified of any changes.**

**ACADEMIC MISCONDUCT**

Cheating or collaborating on assignments, plagiarism (copying others work in any form without proper reference and citation), or any other form of academic misconduct is strictly prohibited and will not be tolerated. Consequences for academic misconduct are based on university regulations, and are grounds for a grade of "F".

The CSU Student Handbook defines plagiarism as “Stealing and/or using the ideas or writings of another in a paper or report and claiming them as your own. This includes but is not limited to the use, by paraphrase or direct quotation, of the work of another person without full and clear acknowledgement.”

Please refer to the university student handbook for further information, including penalties for plagiarism at <http://www.csuohio.edu/studentlife/conduct/acadregs.html>.

## **STUDENTS WITH SPECIAL NEEDS**

“Educational access is the provision of classroom accommodations, auxiliary aids and services to ensure equal educational opportunities for all students regardless of their disability. Any student who feels he or she may need an accommodation based on the impact of a disability should contact the Office of Disability Services at 216-687-2015. The Office is located in UC304. Accommodations need to be requested in advance and will not be granted retroactively.” Students should notify the instructor as soon as possible if they have been granted an accommodation through the Office of Disability Services.

## **TEXT**

*Required readings* are all provided on Blackboard. The primary text consists of excerpts from:

**Beach, David, ed. *The Greater Cleveland Environment Book*. Cleveland: EcoCity. 1998.**

The following *optional text* can be purchased at the CSU bookstore, or online. It is also be available at the University library or through the Ohiolink library system:

***Ohio’s Natural Heritage*. Michael B. Lafferty, Editor. Published by the Ohio Academy of Science, Columbus, OH. ISBN: 0-933128-02-9.**

All additional required readings will be available on Blackboard.

## **Course Schedule and Weekly Reading Assignments**

### **CLASS 1, Sept. 1**

1. Introductions.
2. Reading.
3. Class Meetings

- a. In-class group exercises.
  - b. Quizzes.
  - c. Lectures.
  - d. Field trips, including how to dress and how to get there. They happen rain, blizzard or shine.
4. Class Journals.
    - a. Use of Blackboard.
    - b. How to include photos in your journals.
    - c. No plagiarism.
  5. Natural History Museum visit - \$10.
  6. Syllabus Review. Grading. Exam and Final Presentation.
  7. How to Get a Decent (or even Great) Grade.
    - a. My policy on attendance.
    - b. Late assignments.

**Discussion:** What do we mean by “the natural history of Cleveland”?

**In-Class Exercise:**

Step outside onto Euclid Avenue. What do you think are the natural and human forces that created this landscape? Is the land flat or hilly -- why? What assumptions could you make about the soil here, and why? Where does precipitation that falls here end up? Followed by class discussion.

**CLASS 2, Sept. 8**

*Field Trip: Rocky River Reservation (Geology), 24000 Valley Parkway, North Olmsted, OH 44070*

**CLASS 3, Sept. 15**

LECTURE: Geology and Glaciation

Reading: pp. 23-38, “The Changing Landscape”

QUIZ

**CLASS 4, Sept. 22**

LECTURE: Climate, Soils & Forest Systems

Reading: pp. 49-57, “Biological Diversity of the Region”

QUIZ

**In-Class Exercise:**

Group 1. Discuss the difference between climate and weather. Give examples of weather characteristics.

Group 2. Draw a soil profile on the blackboard, and describe the five factors that influence soil makeup.

**CLASS 5, Sept. 29**

LECTURE: Water

Reading: pp. 69-120 and 181-191, “Our Great Lake,” “Watersheds” and “Water Quality”

QUIZ

**In-Class Exercise:**

Group 1. Draw both the Natural Water Cycle and the Urban Water Cycle on the blackboard, and describe how they work.

Group 2. Describe (and draw if you want) a typical river/stream system, and explain how this system resembles a tree.

VIDEO: The Return of the Cuyahoga

**CLASS 6, Oct. 6**

*Field Trip: Watershed Stewardship Center, Northeast Ohio Regional Sewer District  
2277 West Ridgewood Drive, Parma, OH 44134*

**CLASS 7, Oct. 13**

*Resume workshop - Career Services Center - (Optional, 10 extra credit points for attending)*

*Also to be completed on your own, anytime this week:*

*Natural History Museum Questionnaire*

*\*Self-guided. You can visit the museum and complete the questionnaire (on Blackboard) anytime prior to Oct. 27. Student admission is \$10.\**

**CLASS 8, Oct. 20**

LECTURE: Land Use, Urbanization and Suburbanization

Reading: pp. 141-166, “Land”

**CLASS 9, Oct. 27**

*Brecksville Reservation - Meet at Nature Center*

**CLASS 10, Nov. 3**

LECTURE: Air Quality and Transportation

Reading: pp. 169-177 and 213-224, “Air” and “Transportation”

**CLASS 11, Nov. 10 - NO CLASS - VETERAN’S DAY**

**CLASS 11, Nov. 17**

LECTURE: Native Americans, Human Impacts & Conservation

Reading: “The Early History of Cleveland” - on Blackboard!

Reading: “Dispatches from a Green City on a Blue Lake” - <http://www.gcbl.org/blog/2016/12/dispatches-from-a-green-city-on-a-blue-lake-the-2016-edition>

**\*Exam Review\***

**In-Class Exercise:**

Group 1. Give an account of the earliest days of Cleveland’s European settlement (1790s-1810s). For example: What natural conditions did the settlers find? Why was the city situated where it was? Why didn’t anyone want to live near the river? Other interesting facts.

Group 2. How is Northeast Ohio doing in its quest to become a more sustainable region -- in other words, to balance nature with human settlement?

**CLASS 12, Nov. 24**

*Field Trip: Cuyahoga Valley National Park*

**CLASS 13 - Dec. 1**

**\*Final Exam\***

Talk about Final Presentations

**CLASS 14 - Dec. 8**

**\*Final presentations, Part 1\***

**CLASS 15 - Dec. 15**

**\*Final presentations, Part 2\***