



**Course Syllabus:  
Graduate Seminar in Geosciences  
“Criticism and Controversy in the Geosciences”**

McCoy College of Science, Mathematics, and Engineering

GEOS 5313 Section 201

Spring 2024

M 4:30 – 5:20 pm | Bolin Hall 117

[Course D2L Site](#)

**Contact Information**

Instructor: Dr. Steven J. Rosscoe

Office: Pierce Hall 204

Office hours: MF 8:30 am – 9:30 am, M 1:00 pm – 4:00 pm | Appointment

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**Course Description**

The Graduate Seminar in the geosciences will cover selected topics within the field of geosciences. Graduate seminar is offered each semester and must be taken at least four times prior to awarding either the combined Bachelor of Science/Master of Science degrees with a major in Geosciences or the two-year Master of Sciences degree with a major in Geosciences. (May be repeated for credit; see above.)

In any field of science, the key to scientific advancement is the adversarial nature of science. If the default mode of scientists is to agree with others without intentional and intensive critique, many poor scientific understandings would hinder the progress of science. As such, this seminar will focus on the role of critique, criticism, conflict, and controversy in science. Through the semester you will evaluate each other, other scientists, and a major controversy in the field today.

**Course Learning Objectives**

The successful completion of this course will be evaluated around the following course learning objectives. Each of these course learning objectives include aspects of both content knowledge and skills development. Students will:

1. Develop a plan to effectively meet your spring semester objectives (proposal writing, proposal defense, thesis writing, thesis defense).

2. Understand how to effectively and constructively critique the work of others. Additionally, you should be able to use your critique of others to critique your own work and be able to accept the critiques of valuable steps toward creating a better overall product.

3. Develop the ability to read about geological concepts outside of your content area and become informed on the topic at a level sufficient enough to critique and formulate scientifically valid opinions.

### **Textbook**

#### Required Textbook:

McPhee, John. 1998. *Annals of the Former World*. Ferrar, Strauss and Giroux, New York. ISBN: 978-0-374-51873-8.

*NOTE: In this course you will be required to read Book II: In Suspect Terrain. I highly recommend keeping and reading the entire book. It is a fascinating look at the geology of the United States with a pretty good look at how the science of geology was evolving as McPhee wrote these books. Enjoy the read!*

### **The Course Grade**

The formal grade for this course is determined by your performance on two mini-projects, participation in group discussions, and a position paper. Table 1 shows the point distribution for each of the major activity groupings. Table 2 (next page) shows the point allocation for the determination of the final letter grade in the course.

Table 1: Points allocated to each assignment type. For more details see assignment descriptions below.

<b>Assignments (Quantity)</b>	<b>Points</b>
Semester Plan	10
Elevator Pitch and Response	30
Proposal Presentation or Proposal Critiques	60
Discussion Participation	100
Position Paper	100
<b>Total Points</b>	<b>300</b>

Table 2: Total points for final grade.

<b>Grade</b>	<b>Points</b>
A	270 and up
B	240 to 269
C	210 to 239
D	180 to 209
F	Less than 180

### Semester Plan (10 points)

The typical graduate student in an MS program invests two or more years in their studies and research. Going beyond two years can add to expense and make it harder to complete your thesis project. Each semester you should establish a series of goals. Review the [timeline and requirements for a thesis](#) at MSU. Prepare a detailed plan to reaching your semester goals and move your project work along.

- First Semester Graduate Students: Your minimum objective should be finding a faculty member, deciding on a project direction, and establishing your faculty committee.
- Second Semester Graduate Students: Your minimum objective should be making substantial progress toward or, ideally, completing your thesis proposal. You are required to have a final and approved thesis proposal before you can register for GEOS 6983 Thesis.
- Third Plus Semester Graduate Students: Your minimum objective should be generating substantial portions of or completing the writing process of your thesis.

You will type up your timeline, with specific dates and events, for the semester. Submit this as a MS Word document or PDF through D2L by the due date.

### Elevator Pitch (30 points)

As a graduate student you are expected to be able to develop ideas and projects independently. This doesn't mean that you cannot solicit opinions and help from peers or faculty, but it does mean you should have a level of ownership and understanding of your project that shows you have what it takes to get the job done. In this assignment you will do a written version of the elevator pitch. An elevator pitch is typically 30 to 60 seconds in length and designed to get the interest of an individual who could benefit the project. An elevator pitch needs to show you know what you are doing, how you are going to do it, and what the value of the project is. Your written elevator pitch will be posted in D2L in the Elevator Pitch Discussion Topic. The topic of your elevator pitch should be your thesis topic or prospective topic of interest. Your pitch should have an objective of building support for your project in some way (hooking an advisor, finding funding, proposal passage, etc.). The successful completion of this assignment requires (see due dates on the last page of this syllabus):

- Posting your pitch to the D2L discussion board (20 points).
  - The pitch should be between 2500 and 3000 characters (including spaces)
  - The pitch should have a clear objective.
  - The pitch should show that you have deep knowledge of the project.
  - The pitch should demonstrate that you are confident and competent in the completion of the project.
- Reply to each of your peer's elevator pitches (10 points).
  - For each reply:
    - You must provide at least one positive comment (something that was good).
    - You must provide at least one constructive comment to improve the pitch (address, politely, something that was meh or problematic).

#### Proposal Presentation or Proposal Critiques (60 points)

The graduate faculty have decided that each graduate student should, as part of the proposal process, give an oral presentation covering all of the significant elements of their thesis proposal. The intent is to move students toward the goal of completing their formal written thesis proposal before the start of their third semester in the program. Presentations will be 15 minutes in total length. The presentation itself will run 10 to 12 minutes, with 3 to 5 minutes for questions from students and faculty in attendance.

Required elements for the presentation will be:

- Introduction
- Background
- Hypothesis
- Scientific Questions
- Procedures
- Expected Result

Students who have yet to complete a proposal will be required to present.

Students who have already completed and have had their thesis proposal accepted will be required to:

- Mentor one or more of your peers working on their proposal presentation.
- Critique and provide feedback to each of your peers who present during the semester.

Rubrics and further information (as needed) will be provided later in the semester. Presentations will be Monday, April 8, 2024 and Monday April 15, 2024, during the seminar meeting.

### Discussion Participation (100 points)

There will be five meetings of the seminar dedicated to discussion of selected topics (Wagner's Gap, *In Suspect Terrain*, The Anthropocene). Each discussion day is worth 20 points overall. These points are earned based on your active participation in the discussion. To earn full credit, you must:

- Attendance: Be in attendance for the discussion (5 points).
- Preparation: Demonstrate that you have read and comprehended the reading (5 points).
- Participation: Participate actively throughout the discussion by asking questions, answering questions, and stating your opinions (5 points).
- Decorum: Your participation is science based, not overly emotional, and not destructive to the conversation or hurtful toward others (5 points).

\* NOTE: The Anthropocene discussion will be an online discussion during the last two weeks of class. Because some of you will be presenting at various meetings during this time we will use an online format. Each week will have a different overall topic. You must:

- For Attendance: Start an original thread related to the overall topic for the week. This thread should be approximately ten sentences in length.
- For Participation: You must reply to each of your peer's threads with a three to five sentence response. These should be original, not just praise or disagreement, and repetition.

### Position Paper (100 points)

The final project for the course is the writing of a formal position paper on whether or not the Anthropocene is the scientifically appropriate and properly recognizable epoch of geologic time. The paper should demonstrate an understanding of how time formal time is established in geology (30 pts), the pro and con arguments about the designation of the Anthropocene (50 points), and show that you have formulated a clear and scientifically valid opinion about the topic (20 points). The paper is due at the end of the semester.

- The paper must meet the following formatting requirements:
  - 3-4 pages in length
  - Double-spaced
  - 1-inch margins all around
  - Calibri 11 or Times New Roman 12 font
- Submitted in D2L as a MS Word document or PDF

## Grading Policies

### Late Work

Most assignments in this course have at least a week of lead time before their due dates. It is your responsibility to complete the assignment before the due date. If you have something that will prevent you from completing the

assignment on the day it is due, get it done earlier. **No late work will be accepted.** Missed labs and examinations may be made up with a legal, paper-documented, excuse. See below for make-up work policy.

#### Make-Up Work

For legal, paper-documented, excuses make-ups for labs and examinations can be completed. Discussions cannot be made up; discussions require interaction with your peers in real time. Make-up work should be arranged for in advance wherever possible. The instructor will give you a new deadline that is reasonable for the course timeline. **No make-up work (lecture or lab) will be allowed beyond 10 days past the original deadline.**

#### Instructor Class Policies

The following policies are the policies that are integral for our successful completion of the course and should be read thoroughly. If you have any questions, please see the instructor.

#### Academic Honesty

Academic dishonesty is considered cheating, collusion, and plagiarism. Any unauthorized assistance during the completion of assignments, using on aids beyond those authorized for an assignment, or the use of other people or services to complete assignments is considered cheating. Working with others in a way that is not authorized by the instructor to complete assignments is considered to be collusion. Plagiarism is the use of another person's materials (by paraphrase or direct quotation) without giving them full and clear acknowledgement. The use of material prepared by another person or agency selling term papers and academic materials is also considered plagiarism.

The use of any artificial intelligence (AI) in completing course assignments is NOT allowed. AI in this sense is any technology that summarizes, writes, or answers questions on its own. Recent court rulings have allowed lawsuits to go forward against Chat GPT and other AI operators because it directly plagiarizes the use of others. College is about you learning to write, you developing your voice, and you learning how to process, summarize, and properly cite information. Any use of AI is considered a violation of this academic honesty policy.

If a student is caught cheating, colluding, or plagiarizing on any assignment the assignment grade will automatically be a zero. Two or more violations will result in failure of the course.

#### Classroom Civility (IMPORTANT)

Learning, especially in science, can be a very challenging process. Learning often requires putting yourself out there and being vulnerable. Science also happens to be at the forefront of information which may conflict with personal beliefs. Your beliefs are yours and nothing will change that, though those beliefs may not get

you credit on the exam. We are focused on science and what understandings have been developed in the field. Additionally, no scientist thinks the same way as every other scientist. To develop the best understandings of our universe, we must seek input from all people in the field.

In my classroom, we strive to create an environment where everyone is respected and valued for who they are. We are all here together, learning together, and working toward the same goal. This is not a place for hate of any kind. The use of derogatory language, hate speech, or violence is absolutely unacceptable in this classroom and in any setting related to the course. Learn to work with and value all people. Be civil and treat each other with respect. Do your best to listen to each other, in any conversation. Use of derogatory language, hate speech, or violence will result in removal to the classroom or the course.

Dr. Rosscoe (me) is available to help if you have any concerns or questions about building a positive classroom environment. The campus also has numerous resources related to a safe and welcoming experience at MSU. Also, don't forget the MSU Safety App.

- [MOSAIC Cross Cultural Center](#): Works to create a campus community where all students feel included, affirmed, and successful.
- [Title IX Misconduct](#): Dating violence, sexual assault, sexual harassment, stalking, and other forms of sexual misconduct.
- [Bias Incident Reporting](#): Bias and hate incidents related to race, gender, or sexual identity.
- [Disability Grievance Procedures](#): Discrimination on the basis of disability.

#### COVID-19 and Illnesses

Since COVID-19, classroom health has been a necessary and probably long overdue focus. While there are no longer COVID-19 policies in place by the university the following procedures are scientific best practices. These same principles can be applied to any viral infection (flu, cold, etc.).

- If you become ill and have symptoms, get tested.
- If you are positive for COVID-19, stay home. It's good for your recovery and good for protecting your peers.
- Illness happens and if you absolutely must be in public, wear a mask. Even a cloth mask reduces the chance you will spread the illness to others.
- If you stay home or miss assignments, be sure to get a Doctor's note and excuse. It lets me help you make things up.

In the case of long-term illnesses or medical situations that will prevent you from attending classes regularly, contact the professor (me) as soon as possible. We will work together to make sure that you can succeed, just make sure it's

Doctor-documented. I can't do much to help, if I don't know until the day before the semester ends.

#### Electronic Devices

Use of electronic devices for taking notes is allowed in my classroom. Recording (audio or video) is not allowed unless approved by the instructor for educational purposes. The use of social media or streaming anything is not an appropriate use of technology during class. If your use of technology is non-educational or is being disruptive to your peers, you will be asked to leave.

#### Course Grade and Grade Bumps

In my courses, a grade is earned by accumulating points throughout the semester. The grade you earn in the course is determined by the number of points you earn through the timely completion of assignments. As such, at the end of the semester, there are no grade bumps given out. Do not ask how or if you can be bumped up to the next letter grade, if you haven't earned the points you will not be able to get that grade.

If you believe there to be an error in the calculation of your grade, whether it is on a specific assignment or the whole course feel free to ask me to re-evaluate and double check. I will do so happily. For specific assignments, be prepared to give me specific reasons you feel the grade is wrong (which wrong answer do you think was right, etc.).

#### Desire-to-Learn (D2L)

Extensive use of the MSU D2L learning management system is required in this course. Each student is expected to be familiar with this program as it provides a primary source of communication regarding assignments, examination materials, and general course information. You can log into D2L through the MSU Homepage. If you experience difficulties, please contact the technicians listed for the program or contact your instructor.

#### Computer Requirements

Taking this course involves the completion of all lecture exams, reading quizzes, and discussions in the course learning management system (D2L). This class requires you to have access to a computer (with Internet access) to complete and upload your assignments. It is your responsibility to have (or have access to) a working computer in this class. **Assignments and tests are due by the due date, and personal computer technical difficulties will not be considered a reason for the instructor to allow students extra time to submit assignments, tests, or discussion postings.** Computers are available on campus in various areas of the buildings as well as the Academic Success Center. **Your computer being down is not an excuse for missing a deadline!!** There are many places to access your class! Our online classes can be accessed from any computer in the world which is connected to the internet. Contact your instructor immediately upon having computer trouble. If you have



technical difficulties in the course, there is also a student helpdesk available to you. The college cannot work directly on student computers due to both liability and resource limitations however they are able to help you get connected to our online services. For help, log into D2L.

#### Inclement Weather Policy

In cases of extreme weather events that delay or close campus and where those delays or closures impact the course:

- If the closure or delay includes lecture meeting time, the lecture will not meet and the lecture schedule for the semester will be modified.
- If the closure or delay includes a laboratory meeting time, the laboratory will not meet and all remaining laboratory meetings for the week will be cancelled to keep the lab sections on the same schedule. Lab due dates and lab quiz dates will be adjusted.
- If due dates are impacted by the delay or closure they will be rescheduled.
- All changes to the course schedule will be posted, in writing, in D2L.
- NOTE: Because all students do not have equal or reliable access to technology and internet, especially in times of inclement weather, we WILL NOT shift to online in cases of inclement weather.

#### **University Policies and Information**

The following information and policies apply to this course. Please read each of these policies and ask your instructor if you have any questions.

#### Important Dates

Martin Luther King Jr. Holiday: January 15, 2024

Last day for term schedule changes: January 19, 2024

Deadline to file for May graduation: February 12, 2024

Spring Break Holiday: March 09, 2024 to March 17, 2024

Last Day to drop with a grade of "W": March 25, 2024

Commencement: May 11, 2024

#### Attendance

Students are expected to attend all meetings of the classes in which they are enrolled. Although in general students are graded on intellectual effort and performance rather than attendance, absences may lower the student's grade where class attendance and class participation are deemed essential by the faculty member. In those classes where attendance is considered as part of the grade, the instructor should so inform students of the specifics in writing at the beginning of the semester in a syllabus or separate attendance policy statement. An instructor who has an attendance policy must keep records on a daily basis. The instructor must give the student a verbal or written warning prior to being dropped from the class. Instructor's records will stand as evidence of absences. A student with excessive absences may be dropped from a course by the

instructor. Any individual faculty member or college has the authority to establish an attendance policy, providing the policy is in accordance with the General University Policies.

#### Change of Schedule

A student dropping a course (but not withdrawing from the University) within the first 12 class days of a regular semester or the first four class days of a summer semester is eligible for a 100% refund of applicable tuition and fees. Dates are published in the Schedule of Classes each semester.

#### Refund and Repayment Policy

A student who withdraws or is administratively withdrawn from Midwestern State University (MSU) may be eligible to receive a refund for all or a portion of the tuition, fees and room/board charges that were paid to MSU for the semester. HOWEVER, if the student received financial aid (federal/state/institutional grants, loans and/or scholarships), all or a portion of the refund may be returned to the financial aid programs. As described below, two formulas (federal and state) exists in determining the amount of the refund. (Examples of each refund calculation will be made available upon request).

#### Services for Students with Disabilities

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Clark Student Center, Room 168, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to [Disability Support Services](#).

#### Campus Carry Rules/Policies

Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. The new Constitutional Carry law does not change this process. Concealed carry still requires a License to Carry permit, and openly carrying handguns is not allowed on college campuses. For more information, visit [Campus Carry Rules and Policies](#)

#### Active Shooter

The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information provided by MSU Police Department regarding the options and

strategies we can all use to stay safe during difficult situations. For more information, visit [Safety / Emergency Procedures](#).

#### Smoking/Tobacco Policy

College policy strictly prohibits the use of tobacco products in any building owned or operated by MSU. Adult students may smoke only in the outside designated-smoking areas at each location.

#### Alcohol and Drug Policy

To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place which prohibits the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state and federal law for any offenses involving illicit drugs on University property or at University-sponsored activities.

#### Grade Appeal Process

Following the appropriate procedure for grade appeals requires you to speak to your instructor first, so talk to your instructor. Students who wish to appeal a grade should consult the Midwestern State University [Graduate Catalogue](#).

## Course Schedule

Notice: Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

<b>Week</b>	<b>Meeting Topic</b>	<b>Items Due</b>
<b><u>Week 1</u></b> <b>01/15</b>	<b>No Classes</b> <b><i>MLK Jr. Holiday</i></b>	
<b><u>Week 2</u></b> <b>01/22</b>	Introduction   Scientific Progress	
<b><u>Week 3</u></b> <b>01/29</b>	Thesis Proposals and Presentations	
<b><u>Week 4</u></b> <b>02/05</b>	Critique, Criticism, and Conflict	Semester Plan
<b><u>Week 5</u></b> <b>02/12</b>	The Peer Review Process	
<b><u>Week 6</u></b> <b>02/19</b>	Argument in Publications	Elevator Pitch
<b><u>Week 7</u></b> <b>02/26</b>	<i>Wagner's Gap Discussion</i>	
<b><u>Week 8</u></b> <b>03/04</b>	Cranks and Devil's Advocates	Elevator Pitch Critiques
<b><u>Break</u></b> <b>03/11</b>	<b>No Classes</b> <b>Spring Break</b>	
<b><u>Week 9</u></b> <b>03/18</b>	<i>In Suspect Terrain Discussion</i>	
<b><u>Week 10</u></b> <b>03/25</b>	<i>In Suspect Terrain Discussion</i>	
<b><u>Week 11</u></b> <b>04/01</b>	Formalizing Geologic Time	Proposal Defense Slides
<b><u>Week 12</u></b> <b>04/08</b>	Thesis Proposal Presentations	
<b><u>Week 13</u></b> <b>04/15</b>	Thesis Proposal Presentations	
<b><u>Week 14</u></b> <b>04/22</b>	<b>No Meeting</b> <b><i>GSA Meeting - Springfield</i></b>	Defense Critiques
<b><u>Week 15</u></b> <b>04/29</b>	<b>No Meeting</b> <b><i>AAPG SWS Meeting - Abilene</i></b>	Position Paper

\*While we will not meet during the last two weeks of class you will be responsible for actively participating in an online discussion related to the Anthropocene.