



**Course Syllabus: Solid Earth and Exploration Geophysics**  
**McCoy College of Science, Mathematics, and Engineering**  
**GEOS 5413**  
**Fall 2020**

**Contact Information**

Instructor: Dr. Andrew Katumwehe

Office: Bolin 307H

Lecture: MWF 10:00-10:50 AM RM 125

Office hours: W, Fr: 2:00 – 4:00PM and R: 2-3 PM and by appointment or zoom

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**Office hours**

Due to Covid-19 pandemic, please feel free to call in or use zoom for a one on one meeting but if you choose to come to office please have your face cover on and first send an email.

**Course Description**

This is a lecture-based overview of geologic, physiographic / tectonic provinces of North America followed by student-led investigations. Particular emphasis will be placed to the prehistory of the provinces from Precambrian through the present and the resulting distribution of structures, landforms, stratigraphy, energy and mineral resources and geological hazards. Where necessary classes will transition to online and lecture materials will be presented as voice over PowerPoints and, zoom on D2L. The instructional mode may change in response to Covid-19 related issues. If such a change is required, this course may be done fully online.

This course will comprise of overview lectures based on tectonic history of specific areas. However students will be assigned special readings on historic findings, current research and presentation of topical research.

**Objectives**

At the end of this course, students should be able to recognize, describe and analyze geologic/ geomorphic provinces of North America from the perspective of their plate tectonic evolution, geomorphic evolution, geologic resources and geologic hazards. The question remains as to what do these geological features tell us about the tectonic history of an area?

## **Required Textbook & Instructional Materials**

No required text book for this course. However different research materials will be used in this class.

## **Student Handbook**

Refer to: [Student Handbook 2017-18](#)

## **Academic Misconduct Policy & Procedures**

Academic Dishonesty: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted norm of crediting, or the submission for credit of work not the individual's to whom credit is given). Additional guidelines on procedures in these matters may be found in the Office of Student Conduct.

## **Grading**

Lecture Portion of course = 100% of final grade. Assignments=30% of final grade. Presentations =50%, individual research paper in line with your research paper contributes 20% of the total grade. Lecture attendance and participation is mandatory and your presentation will fully be graded based on a rubric. You have to submit your presentation after presenting it for a grade. You will need to be able to provide assignments and research paper in a format compatible with D2L (e.g. .doc, .pdf, .jpeg, etc. Presentation is limited to 15 minutes and will be followed by 5-10 minutes for questions from peers. Presentations may be PowerPoint or poster-based or zoom depending on the prevailing circumstances. Presentations will be graded on the clarity of the presenter, knowledge of the topic (not reading off the slide) and no clutter. Research papers must be between 2250 and 3250 words (about 4-6 pages of text based on 11-pt or 12-pt font; word count per MSWord's word count tool) and be no longer than ten total pages including illustrations and title page. Papers must contain an abstract no more than 250 words (not included in word count) and highlights of the paper. At least 5 primary, peer reviewed references, and be structured as follows: (1) Abstract and highlights; (2) Introduction (background and rationale for paper topic choice); (3) Methodology; (4) Discussion what would be your take home message and want to share with your colleagues as a result of your research); (5) Conclusion (highlight or restatement of most important learning's from your perspective and why you chose the particular topic); and (6) references (minimum of five primary references). Figures and/or tables (with captions and references) may be included within the text or at end of paper as appendices. Format – MS Word; paper copy and electronic copy to be submitted per the course schedule/syllabus. Research papers submitted more than two weeks late may be given a grade of zero. Papers must be submitted as electronic copies through a dropbox on D2L with the words "GEOS5413 Paper Fall 2020-your name". The research paper grade is determined

based on format compliance (up to 60% of paper grade; and logical reasoning (up to 40% of paper grade).

**Table 1: Points allocated to graded item or group of items discussed in the Grading Section above.**

<b>Graded Items</b>	<b>Contribution to Final Course Grade</b>
Presentations	50%
Assignments, attendance and participation	30%
Research papers	20%

**Table 2: Final grade determination** (grades are rounded up to the nearest integer before assigning the final course letter grade.

<b>Grade</b>	<b>Points</b>
A	90 and above
B	80-89
C	70-79
D	60-69
F	Less than 60

### **Homework**

See Grading Section for details – All Homework to be submitted to my office in your regular lab section

### **Exams**

No exams in this course.

### **Research Paper**

See Grading Section for details about content and format. All Research Papers must be submitted in Microsoft Word or PDF format. A dropbox will be created on D2L but you will not be penalized by sending your research paper to [andrew.katumwehe@msutexas.edu](mailto:andrew.katumwehe@msutexas.edu).

### **Lecture (Attendance) Extra Credit**

Limited extra credit opportunities will be available on an irregular and random basis during the lecture portion of the course. Generally, these opportunities will

involve a short written response to a question or problem posed during the lecture or more often than not, simply your signature on attendance sheet.

Students who leave lectures early may be marked absent. Any proximal interaction, including supervision or collegial interaction in the class requires a cloth face covering. The SARS-Cov2 virus is a threat to the execution of this class. We will replicate conditions that have been useful to healthcare workers.

Rules:

- Stay home if you or anyone in your immediate dwelling is ill.
- You must pass a daily self-assessment whenever you engage in non-remote work – reporting the absence of fever or other symptoms.
- Wash hands for 20 seconds whenever possible. Use hand sanitizer at least once per hour.
- Maintain 6 feet distance when possible.
- Masks are to be worn whenever in close proximity or in closed spaces.
- Wipe equipment with disinfecting cleanser before exchanging users.
- Maintain a same sitting in the lecture hall

Information on the face covers can be found on: <https://msutexas.edu/return-to-campus/assets/files/msu-texas-facial-covering-requirement.pdf>

#### COVID-19 ACCOMMODATIONS

Students may apply through; <https://msutexas.edu/student-life/disability/covid/student-concerns.php>

#### **Late Work**

Late work will be accepted. However, the following penalties will apply in all cases of late submittals: 10% for one day past due; 20% for two days past due; 30% for one weeks past due; after one week a grade of zero may be recorded. No course assignments will be accepted after 12/04/2020.

#### **Important Dates**

The last Day to drop this course is found in the University 2020 Falls calendar under [Drops, Withdrawals & Void](#)

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

The MSU D2L program is a part of this course. Lectures, review materials, assignments, dropbox and course information are available through D2L. 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.

#### **Online computer requirements**

Taking an online class requires you to have access to a computer with reasonable 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, presentations are due by the due date, and personal computer technical difficulties may not be considered as a reason for the instructor to allow students extra time

to submit assignments. Computers are available on campus in various areas of the buildings as well as the Academic Success Center. 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 personal computer trouble. 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](#).

### **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](#) or <https://msutexas.edu/student-life/disability/>.

### **College Policies**

Campus Carry Rules/Policies are given here: [Campus Carry Rules and Policies](#)

### **Smoking/Tobacco Policy**

College policy strictly prohibits the use of tobacco products in any building owned or operated by WATC. 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**

Students who wish to appeal a grade should consult the Midwestern State University [Undergraduate Catalog](#)

**Notice**

Due to the un-predictability of Covid-19, changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor. These changes will be communicated to all students through [D2L](#). Please check the course news on a regular basis for schedule updates.

The course schedule detail is given on the next five pages. The first table lists lecture topics, readings, and the dates for individual and group presentation

**GEOS5413**  
Week Dates

**Lecture Schedule**  
Topics Covered (general)

**Spring 2020**

1	<b>08/24;</b> 26; 28	Introduction;	
2	08/31; 09/2; 4	Rock/Sediment Type; Structural Form	
3	09/7; 9; 11	Mechanisms that impart change; Forcing Variable: Tectonic Change	
4	09/14; 16; 18	Forcing Variable: Climate; Forcing Variable; Sea Level and Isostasy;	
5	09/21; 23; 25	Interaction of Tectonics, Climate, and Time; Nearly Flat-Lying Sedimentary Layers; Annotated Presentations/Discussion #1	
6	09/28; 30; 10/02	Nearly Flat-Lying Sedimentary Layers; Annotated Presentations/Discussion #2	
7	<b>10/5; 7;</b> 9	<b>Project Work;</b> Annotated Presentations/Discussion #3	<b>PW; PW;</b> P/D
8	<b>10/12;</b> 14; 16	Crystalline-cored Mid-Continent Anticlines And Domes; Annotated Bibliography Presentations/Discussion #4	
9	10/19; 21; 23	Crystalline-cored Mid-Continent Anticlines And Domes; Foreland Fold and Thrust Belts;	
<b>10</b>	<b>10/26; 28; 30</b>	<b>Crystalline Deformation Belts</b>	
12	11/9; 11; 13	Normal Fault-Dominated Landscapes; Cascadia Volcanic Arc System	
13	11/16; 18; 20	Cascadia Volcanic Arc System; California Transpressional System	
14	11/23; 25; 27	<b>Thanksgiving Break</b>	
15	12/30, 2; 4	<b>Project Work;</b> Tectonic Style, Rock Successions, and Tectonic Provinces	<b>PW; PW</b>
16	12/7, 9,	Tectonic Style, Rock Successions, and Tectonic Provinces; <b>CLASS PRESENTATIONS</b>	