

Geophysics 5096/6331: Global Tectonics/Geotectonics Spring 2023

Instructor: **Dr. Kelly Liu**, Professor of Geophysics

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Grader: Yangyang Liao (ylktb@mst.edu). Office: B16 McNutt

Office hours: anytime, but please email to make an appointment.

Meeting time/place: Tuesdays and Thursdays, 9:30-10:45, McNutt 243

Textbook: Global Tectonics, 3rd Edition, by Kearey, Klepeis, and Vine

Course objectives

As a “capstone” course, Global Tectonics provides students with an integrated view of the Earth’s structure and plate dynamics with an emphasis on information gained through geophysical methods.

Grading scheme

- Homework assignments: 25%
- Mid-term exam: 20%
- Research project presentation: 20%
- Comprehensive final exam: 25%
- Attendance and participation in discussion: 10%

Scales for Grade Assignment:

A: 90 – 100% B: 80 – 89% C: 70 – 79% D: 60 – 69% F: 0-59%

Class Policies

- Each time you missed a class without getting the instructor’s pre-approval, you will lose one (out of a maximum of 10) of the “Attendance and participation” points.
- Your participation points will be reduced if you are found playing your electronics, sleeping, chatting, being significantly late, etc.
- In order to make up a missed exam, you need to notify the instructor about your absence before the exam. In addition, you need to present the instructor with sufficient evidence to justify your absence.
- Late assignments will not be accepted, unless you get the approval from the instructor before the deadline.
- Assignments must be completed independently. While discussions and collaborations during class time are encouraged, homework and examination problems must be solved independently. Plagiarism in any assignment and examination is strictly prohibited. A score of zero will be given to **all involved parties**, and more actions may be taken which may result in dismissal from the university.
- The PPT file for the lecture should be available on Canvas before about 11 PM on the day before the lecture. It is recommended that you bring a copy to the classroom and take notes on them.
- Concerns related to a grade must be raised within a week after the grade was posted.

Tentative Schedule

Week 1: Introduction & history of global tectonics

Weeks 2 and 3: Earth's internal structures

Week 4: Continental drifts

Week 5: Sea floor spreading

Week 6: Framework of plate tectonics

Week 7: Midterm examination and Ocean ridges

Week 8: Ocean ridges

Week 9: Transform and transcurrent faults

Week 10: Subduction zones

Week 11: Subduction zones

Week 12: Mountain ranges

Week 13: Continental rifts

Week 14: What drives plate motion?

Weeks 15 and beyond: Research presentations, final exam

How to get a good grade?

- Attend the lectures (you paid for this!)
- Participate in the in-class activities
- Listen carefully, think actively, and ask questions
- Read the related parts of the textbook before and after the lecture: Do not turn a page until you've understood all the material in it!
- Do homework assignments independently (short-term "pleasure" versus long-term pain)
- Study for an exam at least one week before the exam

Course Canvas overview and navigation message

The course content is located under "Modules" and organized in a sequential order. Each lecture is organized in a module, which contains the lecture instruction ppt, other learning materials such as videos and animations, and homework assignment.

Communication plan

The best way to reach me is through email. I check my email frequently and will strive to answer all emails and questions within 24 hours. I can also be reached in-person during office hours and by appointments.

Feedback plan

We strive to return all graded work with feedback within one week after the due date.

Campus Instructional Support Systems and Resources

Writing Center. The Writing Center's mission is to assist **all students** in their efforts to become better writers, communicators, and critical thinkers. They offer clients structured one-on-one and small-group conversations with peer consultants. Writing Center consultants are fellow students whose strong writing skills and special training allow them to offer meaningful feedback and guidance for any genre of writing. Students, faculty, and staff across all disciplines can make appointments in-person, online, and asynchronously. More information can be found at their website and through email: writing@mst.edu.

Student Success Center. The Student Success Center (SSC) supports student development through individualized tutoring, peer-to-peer life skill coaching, and campus programming – all while providing free coffee and hot beverages! The SSC was developed to provide additional assistance for students academically and help bolster non-academic life skills, such as goal setting and time-management. All student Miners are encouraged to utilize the SSC's free services to get timely support and to enhance their S&T Miner Experience. Visit the SSC at 198 Toomey Hall, contact us at success@mst.edu, or join us on social media [@sandtssc](https://twitter.com/sandtssc). To see the course offerings and times for SSC Tutoring, visit studentsuccess.mst.edu/tutoring/.

UCARE. UCARE is the central point of contact to connect a student who may be experiencing a personal, academic, financial, wellbeing, and/or other concern to support and resources. Sharing your concern with UCARE helps connect a student with solution-focused assistance to support their holistic well-being, success, and academic progress. A referral can be submitted at <https://go.mst.edu/ucare-refer> or by emailing ucare@mst.edu. For urgent matters, check out the [after-hour and urgent resources](#).

Statement about Copyright, FERPA, and Use of Video

It is vitally important that our classroom environment promote the respectful exchange of ideas. This entails being sensitive to the views and beliefs expressed during discussions, whether in class or online. Please obtain instructor permission before recording any class activity. It is a violation of University of Missouri policy to distribute such recordings without authorization and the permission of all who are recorded. More information is provided [online](#).

Accessibility and Accommodations

It is the university's goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on a disability, please contact Student Accessibility and Testing at (573) 341-6655, email dss@mst.edu, or visit <https://saat.mst.edu/> for information.

Student Honor Code and Academic Integrity

- All students are expected to follow the [Honor Code](#).
- [Student Academic Regulations](#) describes the student standard of conduct relative to the University of Missouri System's Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism, and sabotage, any of which will be reported to the Vice Provost for Undergraduate Education.
- Other resources for students regarding academic integrity can be found [online](#).

Student Well-Being

Student Well-Being provides counseling services, health promotion initiatives, and prevention programs to empower the S&T community to thrive and enhance personal, academic, and

professional success. Department office hours are Monday-Friday, 8 a.m. – 5:00 p.m. On the website, you can find information related to individual and group counseling, wellness consultations and trainings, resources for many health and wellness topics, and help for mental health crisis situations.

Health and Well-Being Canvas Course The Health and Well-Being Canvas Course features trainings, presentations, and other health and well-being resources for students. The course is free for all students, is non-credit, and students can enroll at any point in the semester.

Miner Well-Being Certification Program The Miner Well-Being Certification Program is a semester-long certification where students can engage with campus-wide services and initiatives that help develop skills that contribute to personal well-being and success. Housed in MinerLink, students can start the certification at any time in the spring or fall semesters, but it must be completed before the end of the semester in which they started it. Participants who finish the program will receive a certification of completion signed by the director of the Student Well-Being department, a letter of recommendation, and a badge in MinerLink.

Student Support and Community Standards knows student life can be difficult. During your time at Missouri S&T, you may have a friend or peer who needs help navigating their student experience, facing a challenge, or experiencing distress and could benefit from support and connection to resources. You are not alone. We have a dedicated team of Care Managers, numerous resources, and services to support you or your student, friend, or peer. This includes emergency funding support for unexpected emergency expenses. To learn more [visit](#) or [apply online](#).

Nondiscrimination, Equity, and Title IX Missouri S&T is committed to the safety and well-being of our campus community, and to creating an environment free from discrimination and harassment.

The University does not discriminate on the basis of race, color, national origin, ancestry, religion, sex, pregnancy, sexual orientation, gender identity, gender expression, age, disability, protected veteran status, and any other status protected by applicable state or federal law. As used in this policy, the word “sex” is also inclusive of the term “gender.”

Additionally, US Federal Law Title IX states that no member of the university community shall, on the basis of sex, be excluded from participation in, or be denied benefits of, or be subjected to discrimination under any education program or activity. Sexual harassment violations of this law include quid pro quo, hostile environment, sexual assault, dating/domestic violence, and stalking. The U.S. Department of Education has stated the prohibition on discrimination on the basis of sex includes sexual orientation and gender identity.

Students who are experiencing pregnancy or pregnancy-related conditions, including the birthing parent and non-birthing parent, have rights protected under Title IX. Students should contact the Office of Equity and Title IX to learn more about their rights and pregnancy-related assistance/accommodations provided by the University to ensure equitable access to University educational programs and activities.

In accordance with the University of Missouri’s Collected Rules and Regulations, all faculty and staff are required to report any information concerning discrimination disclosed through

communication including, but not limited to, direct conversation, email, social media, classroom papers and homework exercises to the Equity Officer/Title IX Coordinator.

Office of Equity and Title IX

Equity Officer and Title IX Coordinator: Dr. Paul Hirtz

Phone: (573) 341-7734

Location: 900 Innovation Drive, Suite 500

E-mail: equity@mst.edu

Classroom Egress Maps

For all in-person instruction, faculty should explain where the classroom emergency exits are located. Classroom egress maps are posted at <http://designconstruction.mst.edu/floorplan/>.

Student Veterans Resource Center

The Student Veterans Resource Center (SVRC) is the nexus of resources and support for student veterans at S&T. The SVRC provides student veterans with a “safe space” and a familiar atmosphere. The center’s Veteran Consuls provide one-on-one consultations to guide students to various resources on campus, while its advisor provides students with VA health and benefits resources. Visit the SVRC at Harris Hall, Suite G10, and contact us at svrc@mst.edu