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Course Syllabus

GEL 1020 Geology of Colorado

Fall 2024

Sec.001 - 51902: M W 11:00 - 12:15pm Face-to-Face Meeting Time

COURSE(S) ADMINISTERED THROUGH THE CANVAS PLATFORM

Please log in through your MSU DENVER account!

Ancillary Course URL: <https://college.earthscienceeducation.net/GEOCO/index.html>

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Face-to-Face: M W 10:00 - 11:00 AM & 12:30 - 2:00 PM;
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This syllabus may be modified at any time without prior notice.

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Course Description

This science course focuses on the State of Colorado to introduce basic concepts, principles, theories, and assumptions in geology. The course covers Colorado's major geological provinces and landforms; common minerals, rocks, and fossils; geologic processes; geologic resources and hazards; and important events in Colorado's geologic history. One field trip is required. This course fulfills the General Studies Natural and Physical Science requirement.

Credits: 3

Guaranteed Transfer (GT) Pathways Course

The Colorado Commission on Higher Education has approved GEL 1020 for inclusion in the Guaranteed Transfer (GT) Pathways program in the GT-SC2 category. For transferring students, successful completion with a minimum C- grade guarantees transfer and application of credit in this GT Pathways category. For more information on the GT Pathways program, go to <http://highered.colorado.gov/academics/transfers/gtpathways/curriculum.html>.

Course Outcomes and GT Pathways Content Criteria and Competencies

1. Discuss geology in a scientific context (GT-SC Content Criteria 1; GT Competency: Inquiry and Analysis, 4a, 6a; GT Competency: Quantitative Literacy, 1a, 2a).
2. Use Colorado's physical features to apply basic geologic principles (GT-SC Content Criteria 1; GT Competency: Inquiry and Analysis, 4a, 5a, 5b, 6a).
3. Identify common Colorado rocks and minerals using their basic physical properties (GT-SC Content Criteria 1; GT Competency: Inquiry and Analysis, 4a, 5a, 5b, 6a; GT Competency: Quantitative Literacy, 1a, 2a).
4. Relate Colorado's physiographic provinces to their underlying geology (GT-SC Content Criteria 1; GT Competency: Inquiry and Analysis, 4a, 5a, 5b, 6a).
5. Recognize changes produced by the sequence of geologic events through time (GT-SC Content Criteria 1; GT Competency: Inquiry and Analysis, 4a, 5a, 5b, 6a; GT Competency: Quantitative Literacy, 1a, 2a).

Natural and Physical Science General Studies Description

The Natural and Physical Sciences involve discovering knowledge in natural or physical sciences, applying scientific thinking and reasoning, and critically thinking about the use of scientific information.

Student Learning Outcomes

1. Explain the foundational knowledge of a particular field of natural or physical science
2. Apply principles and techniques of scientific thinking.
3. Evaluate the credibility of scientific information and interpret the impact of its use or misuse in society.

Required Course Materials

1. Matthews, Vincent, Katie KellerLynn, and Betty Fox, eds. SP-52 Messages in Stone: Colorado's Colorful Geology. Second. Special Publications, SP-52. Denver, CO: Colorado Geological Survey, Department of Natural Resources, 2009.
<https://coloradogeologicalsurvey.org/publications/messages-in-stone-colorado-colorful-geology>.
2. [Kackstaetter, U.R., 2016, Physical Geology Laboratory E-Manual, Free Edition \(Click to Download\)](#)
3. Rock & Mineral ID Kit (Bookstore)
4. COMPUTER, PRINTER and INTERNET REQUIRED!
5. Face-to-Face (F2F) in person course needs **iClicker** Cell Phone **App**. YOUR PARTICIPATION GRADE DEPENDS ON IT!

Required iClicker Electronic Device App (F2F)

The F2F course requires you to download and install the [iClicker Student Web App](#) in order to participate in iClicker classroom activities on your laptop, tablet, or smartphone and receive your participation grade points for the course. While creating an iClicker student account and installing the app is free, being able to use it to earn participation credits for the course is NOT. Upon creating an account, students have a 14-day free trial period to use the iClicker student app to participate in class. Before that 14-day free trial period ends, students must purchase a subscription or access code in order to continue using the iClicker student app to join class sessions to participate in class. Cost for a 6-month access subscription is a nominal ~\$16 as of this writing.

The subscription can be purchased through our MSU Denver bookstore or directly online from iClicker. [Details can be found here](#). Please note that this is REQUIRED and **your grade depends on it**.

When you come to class, immediately login to your iClicker account for the course. Please use the MSU Denver secure password protected network. Do NOT use MSU Denver's Guest login, as this has a tendency to cause problems as you participate in the course.

Grading in Geology of Colorado

	Assess. Type	Points
Participation (Pop-Quiz lecture question: F2F class)	Individual	100
7 Timed Online Module Quizzes (25 pts ea.)	Individual	175
Virtual Field Trip Colorado Front Range ONLINE Exam	Individual	50
4 Scavenger Hunts - In-Person Field Trips 100 pts ea	G R O U P	400
PAPER / RESEARCH LABS 50 pts ea	Individual	100
"SO, YOU WANT TO BE A GEOLOGIST" COURSE GROUP PROJECT		
Project Grade	G R O U P	100
Grade from Peer Review	3 people max	50
Peer Review	Individual	25
TOTAL		1000

Final Grade Distribution Scale by Points

A+ > 970	A = 930-969	A- = 900-929
B+ = 870-899	B = 830-869	B- = 800-829
C+ = 770-799	C = 730-769	C- = 700-729
D+ = 670-699	D = 630-669	D- = 500-629
F = ≤ 500 points		

Checking Your Course Grade

All exercises and grades are processed through CANVAS. Please log in to see your grade updates as they become available.

Grading and Assessment Overview

NOTE: THE FOLLOWING GRADE PENALTY APPLIES FOR LATE WORK -10% / Day

For the occasional late work there is a generous 10-day grace period beyond the submittal deadline. While there is a late penalty, it usually does not affect the grade that much if the work is turned in ASAP after the deadline and the late submittals don't become a pattern. For more detail see below under LATE WORK / MISSING ASSIGNMENTS.

Assignment / Assessment	Delivery Method OL: online F2F: Face-to-Face	Restrictions / Notices	Assess. Type	Total Points
PARTICIPATION In-class Pop-Quiz Questions ea. mtg. Time	Pop lecture questions to be answered with cell phone app. Grade cumulative through semester.	Open Book, Notes, Resources Must be taken alone Can be taken ONLY ONCE Time limited, usually 45 seconds per multiple choice question	Individual	100
7 Module Online Quizzes [25 pts ea.]	CANVAS Quizzes pertaining to each teaching module.	Open Book, Notes, Resources Must be taken alone Can be taken ONLY ONCE Time limited, usually 25 minutes; NO retakes!	Individual	175
Virtual Field Trip Colorado Front Range ONLINE Exam - Instruction Page -	CANVAS Exam pertaining to a virtual, self guided field trip.	Open Book, Notes, Resources Must be taken alone 60 min time limit! ONE retake!	Individual	50
Scavenger Hunts - In-Person Field Trips	Group assignment to be turned in on CANVAS.	Everyone in the group will receive the same grade, except "Freeloaders", who will receive a ZERO. NO retakes.	GROUP 3 people max	
Scavenger Hunt 1: Red Rocks & Dinosaur Ridge				100
Scavenger Hunt 2: Colorado School of Mines Museum & Trail				100
Scavenger Hunt 3: Lookout & Table Mtns and Golden Gate Park				100
Scavenger Hunt 4: Downtown Denver				100
PAPER / RESEARCH LABS	Individual assignments to be turned in on CANVAS.	NO retakes.	Individual	
Lab 1: My Cell Phone & Colorado Resources Lab				50
Lab 2: "Every Rock Has a Story" Lab				50
"SO, YOU WANT TO BE A GEOLOGIST" COURSE GROUP PROJECT	Peer Reviewed Group assignment creating an advertising pamphlet, video, poster or presentation. Group assignment to be turned in on CANVAS in addition to a Class Room Presentation at the end of the Semester.	For exact details see the project description and explanation . Everyone in the group will receive the same grade, except "Freeloaders" who will receive a ZERO.	GROUP 3 people max	
Project Grade				100
Project Grade from Peer Review				50
Peer Review [see Course Group Project for details]	You will be graded on your peer review of the other projects	Peer Reviews submitted and tracked in CANVAS	Individual	25
TOTAL POINTS				1000

COURSE COMMUNICATION:

The official course communication is CANVAS and your **msudenver.edu** email. Make sure you know how to access both. Do NOT ignore any course messages coming through these two official channels. Your grade depends on it!

ELECTRONIC DEVICES:

This course requires access to a computer, the internet and a printer. If you do not own your personal electronics, our computer labs at MSU Denver can accommodate but you may then need to plan additional time for the course utilizing these resources.

For F2F classes: You will also need a cell phone or tablet or laptop that you MUST bring to every class session. In the rare event that you do not own a cell phone, you must then purchase a physical remote iClicker to earn your participation points.

READY YOUR TECHNOLOGY:

As stated above, technology is REQUIRED for this class. Successful students make technology work for them. Please ready your technology for success at MSU Denver during your FIRST week in the course. These tasks involve getting your phone student-ready as well as your main school device, which is your tablet or computer you'd use to work on your courses. Students without a main device or in need of a printer can work in computer labs like Tivoli 225, Science 1058, Plaza 307, West 244, or Admin 260. Here is a checklist for your convenience.

- Know your single-sign-on username and password and password is a secure one
- Multifactor Authentication is set up (Authenticator app is on phone)
- Successfully log into campus WiFi, AurariaNet when on campus
- Canvas Student App on phone and main school device, logged in successfully, notifications turned on
- Optional: Canvas Calendar synced to phone and device calendars
- Outlook App on phone and main school device, logged in, Email appearing properly
- Teams App on phone and main school device, log in successful
- Word App on main school device
- PowerPoint App on main school device
- Student Hub added to phone homescreen
- Auraria police and text a tip added to phone contacts, Rave alert phone and email verified
- Note-taking method determined and supplies purchased
- Student ID card acquired for building access
- Optional: RTD app or ParkMobile app downloaded
- Create a folder on your phone for School Apps
- iClicker App purchased and installed w/ course login verified

USING AI (ARTIFICIAL INTELLIGENCE):

AI (Artificial Intelligence, such as ChatGPT, etc.) opens a world of opportunities in the geosciences and can alleviate time constraints and stress. Therefore **you are allowed to use AI** for labs, projects or other assignments, with the following addendum:

1. **Remember GIGO** (garbage in - garbage out) from the early days of computing. AI is not infallible! I have tried it and it DOES make mistakes or is missing the point. Therefore, don't trust AI blindly to do a good job. You must still carefully proof-read and edit your work. You are ultimately responsible for correct content, so be careful!!!!
2. **Cite any AI work:** If you use AI, the segments produced by it in your work must be cited, same as you would when including another author's work. You will NOT lose points if AI is used extensively in your work as long as it is properly cited. Beware, that you can lose significant points if you try to hide that fact.
3. Be aware, that when using examples of your course work in portfolios **for future employment or graduate school, AI work may NOT be accepted.** Do NOT try to hide it. The same AI that generates your work is used in academia and employment offices to spot AI generated work with a high degree of accuracy. Note that AI generated resumes, for example, especially the electronic ones, may now be auto-rejected by the AI HR software of your anticipated employer / graduate school admissions. For these reasons it might be best NOT

to use AI for every work project. Be selective where to employ AI in your schoolwork.

4. AI and Exams: **I do NOT allow AI as a source for taking open book online exams, obviously!** As for now, I use the honor system, but reserve the right for occasional spot checks. If abuse is detected, you are in danger of being charged with academic misconduct, which is a “can of worms” you do NOT want to open.

PARTICIPATION:

You are EXPECTED to attend lectures & labs and PAY ATTENTION in both.

Face-to-Face (F2F) in-person or synchronous online classes: Participation means that you are on time in class / logged-in on our scheduled dates and are attentive by taking vigorous notes, NOT engaging in unrelated activities (e.g. using your electronic devices to play games, watch videos, check social media or email, etc.). Participation is tracked through the iClicker interactive student response system. Students earn daily points toward their participation grade by responding CORRECTLY to i-clicker questions randomly presented during lectures / labs.

Note: To earn FULL credits for a day you must a) answer ALL presented questions with your clicker or clicker app and b) answer ALL questions correctly. Incorrect answers will lower your score. Missing a question by not answering will lower your daily score significantly. You may use your notes. There is a time limit ~45 seconds / question.

The iClicker device you have selected for the course must be brought with you throughout the semester to participate, either mobile (preferred), web, or iClicker remote. Download /purchase options: <https://www.iclicker.com/students/> If you do not have / forget your chosen iClicker device for the day, you MUST contact the instructor **immediately** at the beginning of class to be instructed on how to receive at least partial credit (usually lowest iClicker score of the day minus 10%). **Important Note: If you “forget” to contact me that very same day your participation score will be ZERO for the day because points can NOT be assigned retroactively !!!**

Virtual asynchronous online (OL) classes: Your participation is evaluated through module quizzes. Each module quiz covers materials from the video lecture(s), the lab(s), the book(s), and the lab manual / exercises as applicable. While these quizzes are completely OPEN resources (notes, books, manuals, internet, video, etc.), they have the same time constraint as the questions in my F2F classes. Hence, in order to be successful with these quizzes, you MUST take vigorous notes of the material presented in lectures, labs, the book and the manual. Take these quizzes BY YOUR LONELY SELF without the help of any other people. Participation quizzes can be taken ONLY ONCE up to the published deadline.

Important Note: Taking the quiz AFTER the deadline during the 10-day grace period will result in LATE PENALTIES (see below)!

ABSENCES:

Frankly, registering enrolling in this course is a serious commitment on your part akin to you taking employment. I expect from you the same professional courtesies that you would extend toward any employer.

Absences that affect any course assessments (e.g. quizzes, exams, labs, Participation scores, etc.) and permit you to make-up missed work without penalty REQUIRES an external written 3rd party documentation (e.g. Doctor's Notes, hospital forms, therapist affidavit, accident report, etc.) that would verify the legitimacy of your extraneous circumstances, uniquely qualifying you for a personal due-date extension. It is vital that these documents show the EXACT dates. Without such documentation, late penalties or ZEROs will apply to your missed work.

Question: What about family celebrations, weddings, reunions, work conflicts or similar events? Since these events are usually known long in advance, you will need to let me know AT THE BEGINNING OF THE SEMESTER. I will still need an acceptable 3rd party verification, such as booking tickets, wedding announcements, employer's note, etc. showing your name and the date(s) of your anticipated absences.

Important Note: Since ALL assignments are available at the beginning of the semester and can be submitted ANY time BEFORE the listed due dates, a last minute or after-the-fact “oh, I missed the due date” excuse is definitely NOT going to be accepted.

Note: Nothing in this policy shall require the instructor to reschedule classes, repeat lectures or other ungraded activities or provide ungraded individualized instruction solely for the benefit of students who are unable to attend regularly scheduled classes or activities. For F2F classes, some recorded lectures might be available if you missed an in-class lecture. However, this is not always the case. Having a partner to take notes or record the lecture for you during your absence is the preferred venue.

LATE WORK:

Late Work grace period is 10 days beyond the assignment due date with a Late Penalty of -10% / day (which is automatically processed automatically through the CANVAS grading system). After 10 days beyond the due date, late work will no longer be accepted and your assignment grade will drop to a PERMANENT “missing” or ZERO. Be intimately familiar with the CANVAS course calendar which lists due dates for your convenience thus being able to avoid late submittals.

YOU DO NOT HAVE TO WAIT FOR THE DEADLINE TO TURN IN YOUR ASSIGNMENTS!!! *Hint: Turn your work in early and there will be NO problems!*

Exceptions to Late Work Penalties - Occasionally students will asked if I can make an exception to the late work policy for a variety of reasons. Common ones are sudden work conflicts, uncooperative electronics or the internet, traveling, etc. In order to be true to "fairness for all" in the course, the only way I could grant such a request would be an external written 3rd party documentation that would verify the legitimacy of extraneous circumstances, uniquely qualifying you for a personal due-date extension. In short, if I grant you a due date exemption, I must necessarily grant the same privilege to every other student in the class. Without an external written documentation (e.g. Doctor's Notes, hospital forms, therapist affidavit, accident report, etc.) there is not much I can do without violating fairness and impartiality for all students.

For the occasional late work there is a generous 10-day grace period beyond the submittal deadline. While there is a late penalty, it usually does not affect the grade that much if the work is turned in ASAP after the deadline and the late submittals do NOT become a pattern. Think about it this way: Rushing an assessment, throwing it haphazardly together to turn in mediocre work by the deadline may give you a “D”. Taking an extra day, doing a much better job and getting a 90% with a 10% late penalty for being a day late, will give you a final score of 81%, or a B-. Yes, and even if you are two days late your grade might still be higher than in the rushed and mediocre scenario by ONE WHOLE GRADE!!!!

Note: Since everything is posted and available since day 1 of the semester, I usually recommend not to wait until the deadline for submittals but to turn work in early. This will most likely alleviate tons of stress and mitigate uncooperative electronics, sudden work / family conflicts, or similar consternation.

GROUP PROJECT “FREELoader” STATEMENT

Every student working in a group should pull his or her own weight. “Freeloaders” who just put their name in a group hoping to get a good grade while others do the work will be dropped from the group and receive a ZERO by consensus of the remaining group members.

How are “Freeloaders” identified? Here are some common examples that will qualify you as a “Freeloader” and put you in danger of a ZERO:

- Hard to contact; Not replying to emails or phone calls from the group. Group members should document when they initiate contacts with other group members.
- Not initiating contacts themselves, but leaving it up to the group to contact them and then playing the “nobody contacted me” game when the assignment is due. Similarly, engaging in so called “last minute contacting frenzies”, such as NO contact initiation all semester long, but then frantically sending out multiple contacts just before the deadline, claiming that this somehow qualifies as really having “tried” to contact the group.
- Not following through with assigned or selected tasks. This is especially cumbersome when done last minute close to the deadline. To help mitigate this behavior, groups should set internal deadlines and keep all group members accountable for completion of tasks.
- Turning in very shoddy or plagiarized work, the so called “last minute internet copiers”. Cutting it close to deadlines, turning in something blatantly copied from the internet as “their” contribution. Not only does this behavior constitute academic fraud, group members should report such behavior immediately to the instructor.

YOU HAVE BEEN WARNED!

Note: Do not wait too long for a group member to “come through. Document any sign of “Freeloading” by a group member and contact the instructor early. Waiting too long neither serves you nor the “Freeloader” and jeopardizes everyone’s grade.

“I have been kicked out of my group. Now what?”

You have two options: (1) Find another group that will let you work with them. (2) Do the work yourself! Working in

a group is NOT required and you are allowed to do the work alone, by yourself. In either case, you will still be responsible for meeting ALL the associated group project deadlines!

FIELD TRIPS (Scavenger Hunts & Rock Story):

Several self-guided field trips are required for the scavenger hunt field trips and the “Every Rock has A Story” assignments. Students without adequate transportation should find group project partners that have transportation. Please adhere to the current published university health rules when in the field with your group. Your collected physical specimens must be presented together with your project paper when you turn in the assignment. All students must adhere to the university liability waiver before engaging in any trip activities.

EXTRA CREDIT:

If you do an excellent, top-notch job, some extra credit (up to 10%) is build into assignments, labs, quizzes, and exams at the discretion of the instructor.

GRADES & GRADING - Be aware of the following:

TESTS: are completely OPEN resources (notes, books, manuals, internet, video, etc.) I only ask that you take these assessments BY YOUR LONELY SELF without the help of any other people or AI. These Tests have a time limit and having excellent notes from lectures, labs, and books and intently studying beforehand are essential to be successful. These can and should be completed ANY TIME before the published deadline. The ONLINE Exam can be taken TWICE up to the published deadline. The two scores will be averaged. Online quizzes can be taken ONLY ONCE!

Important Note: Taking the exam AFTER the deadline will result in LATE PENALTIES, even for retakes!

For retakes you will get the same exam. Therefore you can copy the correct answers and focus on questions you did get wrong. Unfortunately, some students guess widely on the first take and receive a low grade, hoping now to pull an incredible grade like an A the second time around. This philosophy is fundamentally flawed which can be shown by the following example:

You get a 28% [F] on the first take of the exam. Now you retake the test and pull an 82% [B]. Take the average $(28\% + 82\%) \div 2 = 55\%$, you still have an D- average on the exam.

Therefore, invest time and study. A higher score the first time around means less wrong questions to make up and a greater probability of a much higher score during the retake. Which means a better chance of a passing grade in the course at the end.

Not Enough Time Problem for the Timed Assessments: A common student complaint is the time constriction when taking the online assessments. Since my exams / quizzes are open book / notes / internet, students will have a false sense of security, studying little and hoping to be able to conveniently look up the answers during the examination. Reality: There is truly not enough time **to leisurely look up each and every answer** and you will **FAIL THE EXAM** if you are planning on that. Instead, treat these examinations as if all of these were CLOSED book / notes / internet. Your accessible material for the test will now be a “security blanket” if you have to quickly reference an occasional answer choice here or there. Planning to look up the majority of answers during an exam is doomed to fail.

A LOWER GRADE ON EXAM RETAKES: A few students have managed to get a lower score on a retake. While rare, it does happen. How is this possible since you know which questions you got wrong? The answer is relatively simple and here are the possibilities:

1. You inadvertently copy the correct answers to the wrong question (e.g. question 2 to question 3, question 3 to question 4, and so forth) on the retake. Double check to make certain that you copy your correct answers to the right question.
2. Exams with “Multiple Response” questions can be tricky. In “Multiple Response” questions one or multiple responses could be correct. The computer gives you partial credit for correct responses mixed with missed or wrong responses. If you get more “Multiple Response” selections wrong on a retake than you did on the first take, your grade will be lower. Here is in example:

On a “Multiple Response” question worth 2 points the correct answer choices would be A, C, D and F. During your first take you answered A, D and F, which would be 3 correct but one wrong, because

you omitted it. The computer will give you credit for the correct responses (0.5 pts ea) but will subtract -0.5pts for the omitted correct response. Total credit for this answer would be (3x0.5pts) - 0.5pts = 1 out of 2pts. During the retake you answer the same question with choices B, D, E and F. Now you got 2 correct (2 x +0.5pts), 2 incorrect (2 x -0.5pts) and 2 missing (2 x -0.5pts) responses for a total of -1pt, which defaults to NO points received on your retake for this particular question.

Incomplete (I) for the course:

Because of an extremely poor track record of students keeping their “I” or incomplete commitments, I will no longer give an “I” or incomplete. Facilitating an “I” contract is a substantial time commitment for faculty that spills over into the following semesters. And when students take an “I” lightly and do not complete the work, then facilitating the “I” contract with its tracking requirements is a total waste of my time. To put my decision against “I”s into perspective, only about 1% of my students that have requested and were granted an “I” have ever made an effort and completed the required work. I literally wasted countless hours for them in my misguided decision to help.

Therefore, please do NOT request an “I” unless there are indeed extraordinary, verifiable circumstances completely in line with the university ruling governing the “I” grade. Failing a class or poor performance because of missing assignments are definitely NOT university approved qualifiers for requesting an “I”.

PASSING THE COURSE or FAILING THE COURSE?:

Without preaching a long sermon, here are my observations which can predict with a high degree of accuracy which students PASS and which ones FAIL the course. They are listed in order of importance:

1. **PASS** - watch my video [From an F to an A ... no way! Being successful in College Classes](#) 47:35
 - a. Assignment completed on time BEFORE deadlines - NO late work or missing (most common reason for failure)
 - b. Preparing for the Open Note Tests as if they were Closed Note Tests
 - c. Good Attendance with Participation = **Note Taking!**
 - i. Rigorous Note Taking, not only on lectures
 - d. Good Study Habits and adequate study time - see *A Study Time Estimator* below
 - e. Participating in Study Groups
 - f. Being interested in the subject matter and excited about learning.

2. **FAIL** - watch my video [From an F to an A ... no way! Being successful in College Classes](#) 47:35
 - a. Multiple Late and/or Missing assessments (as few as 2) Probably the **#1 cause for failing the course.**
 - b. Poor attendance! There is a significant linear correlation between course grade and class attendance!
 - c. Taking NO or very poor notes! This is also a big one!
 - d. Disinterest or Boredom!
 - e. Other factors may contribute! Yet while not insignificant they appear to be less importance.

A STUDY TIME ESTIMATOR

Many students, especially first-time college students, are not aware that enrolling in classes is a serious time commitment way beyond the scheduled course lecture/lab times that you are supposed to attend. Here is a quick summary overview:

While the correlation between grades and the amount studied is obvious, students often have a hard time grasping **how much** is required OUTSIDE of the classroom. Worldwide university suggestions including MSU Denver propose 2 to 3 hours per week of student work outside of the classroom for every credit hour taken. Hence you can expect to spend an average of 6 to 9 additional hours per week outside of our lecture and lab time for this 3-credit course to earn or maintain an average passing grade. Criteria for the data given below assumes no or little prior knowledge of the subject matter as far as exams / quizzes are concerned. The data also assumes that the assignment complexity aligns with point values allotted (e.g., a 100 point exam should approximately require 10 times more effort and constructive engagement than a 10 point quiz in the same course). Be advised that the results are only an approximation of probabilities and are NOT guaranteed. However, they will provide you with a valuable guideline to gauge your time commitment!

In order to receive an AVERAGE GRADE or 75% on an assessment, a student should plan to invest the following minimum times OUTSIDE of the Lab and Class:

Assessment Value		Estimated Minimum Time Investment for 75% Grade
Assessment Value out of 1000 Total Semester Points	Assessment Value (Assignment Weighting) out of 100% of Final Grade	3 Credit Hour Course
10 Points	1 %	1.1 hrs
25 Points	2.5 %	2.8 hrs
50 Points	5 %	5.6 hrs
100 Points	10 %	11.3 hrs
150 Points	15 %	16.9 hrs

Those desiring a higher than average grade (>75%) should most likely plan on investing substantially more time than indicated.

The indicated time estimation relates best to quizzes and exams, while labs and other assignments may need more flexibility.

Studying means being engaged in the learning process without distraction: NO TV, NO music (headphones), NO conversation or cell phone / texting. It must involve complete concentration on the task at hand, otherwise the given time estimates easily double.

3 Credit Course - 100pt assignment (10%) ~ 11hrs total	
studying 2hrs per day	about 5 ½ days
studying 3hrs per day	about 4 days
studying 4hrs per day	about 2 ½ days

Students enrolled in a 3 credit hour course and needing to prepare for a 100 point exam (out of 1000 total course points) or 10% assignment weighting, should plan on 11 hrs study time to hope for a C grade. Since daily time is usually limited as indicated in the table the preparation for such a task will need to be stretched over several days.

It is easy to realize that the usual cramming the day or night before an exam will ultimately lead to poor grades and is doomed to fail. The above table summarizes days of study for time allotments per day for a 100 point (10% weight) assignment. Keep in mind that the table indicates a target grade of 75%. A higher grade requires greater time commitment.

EAS Social Media Information

Our departmental social media is a great way to get updates on national and international field trip opportunities; find interesting events, outings, and new courses; connect with alumni, professionals, and other students; and network for

career, internships, scholarships and travel opportunities.

Facebook: <https://www.facebook.com/MSUDenverEAS>

Instagram: https://www.instagram.com/eas_msudenver/

LinkedIn: <https://www.linkedin.com/company/msu-denver-department-of-earth-and-atmospheric-sciences>

LinkedIn is the best way to connect with faculty, alumni, and current students for career opportunities

General Knowledge Prerequisites!

I require the following from students in GEL1020

Even though this course is a general education course and does not list mandatory course prerequisites, it is assumed that you have acquired the following general knowledge skills in the sciences, language, and math through your public education and similar venues. It is the students FULL responsibility to make-up ANY deficiencies in these areas, preferably before enrolling in the course. I will NOT teach, lecture, or tutor any student in these basic High School skills and general knowledge subjects and no further instruction on the topics listed below will be given.

Basic Office Software

Know how to properly use and command MS Word, MS Powerpoint, MS Excel. Graphing with Excel, putting figures / pictures into Word documents, compiling a short presentation using PowerPoint are expected skills in my course.

English Language

Students should be able to write in short, clear, concise sentences when answering questions. Proper syntax becoming to a college student is expected. In many instances you will also be graded on professionalism which includes expressing yourself accordingly in writing. Unless otherwise instructed, always use third person when writing for the sciences. Usage of "I", "we", "my", "mine", "our", is uncommon in technical writing and needs to be avoided.

Basic Mathematical Operations

Students should be able to do the following mathematical operations without any further instructions:

- Round answer to significant digits. (*If you have problems with this, watch the [video](#)*)
- Doing unit conversions (e.g.; continental drift happens at about 5.5cm/yr. How fast would this be in mph?)
- Percent calculations (e.g.; you measure 2.58g/cm³. The actual density is 2.65g/cm³. What is your percent error?)
- Using **units** in ALL your operations (*I am real stickler about that!*)
- Solving equations for an unknown value; manipulating equations (basic Algebra)
- Basic Geometry: surface areas, volumes, circumferences, areas, angles
- Scientific notations (e.g.; 1.8×10⁻⁹m/s) & scientific prefixes (milli-, mega-, terra-, micro-, etc.)
- Metric system & conversions within (µg, mg, g, kg, t, µm, mm, cm, m, km, m², km², cm³, m³, km³)
- Weights & Measurements (Both American and Metric)
- Operating a scientific calculator (e.g.; know how to switch between degrees and radians, know how to use the arctangent function) $\theta^\circ = \arctan(\text{rise/run})$ *Warning: NO cell phone calculators are allowed!*

Graphing

You are required to be able to differentiate between bar, line and scatter graphs and know how and when each one needs to be constructed. Students should be able to hand-draw curved graphs without being sloppy. Be able to extrapolate values from any graph given, no matter the scale and type.

Physics

Students should be familiar with basic Newtonian laws of motion and understand terms such as velocity, acceleration, inertia, mass vs. weight, force, gravitational constants, kinetic energy, potential energy. Being able to work with the following basic physics equations is a must (Middle School Physics!):

$$v=d/t \quad a=d/t^2 \quad a=(v_f-v_i)/t \quad F=ma \quad I=mv \quad KE=1/2mv^2 \quad PE=ma_g\Delta h \quad a_g=9.8m/s^2 \text{ or } 30ft/s^2$$

Chemistry

Background in basic High School chemistry is essential. Students should know element names and associated symbols, how to read atomic weight and atomic mass from the periodic table, difference between covalent, ionic, metallic and hydrogen bonding, meaning of chemical formulas and subscripts. Students also need to understand pH and the difference between oxidizing and reducing environments. Furthermore, a working knowledge of solutions, solubility, mixtures, homogenous and heterogenous systems, and precipitation is a must.

Geography

Students should know basic physical geography, which includes the location of countries, major mountain ranges, and major rivers.

Drawing & Drafting

While the world is moving rapidly to electronic PC drafting, sketching results by hand is a essential skill in geology. Students must be able to use a drawing compass and a protractor. Sketching curves through data points is another required skill.

Citations

Students should know how to properly format and include citations in their work. I highly recommend the FREE citation tracker and database [ZOTERO](#). It will automatically incorporate into your search engine and MSWord, can grab sources from the web at the click of a button and will make citing and creating correctly formatted references a breeze.

COLLEGE OF LETTERS, ARTS, AND SCIENCES SYLLABUS STATEMENTS

A syllabus is a binding contractual document for any course and becomes the guiding legal document when enrolling in a course. Many policies, procedures and resources are university, college and / or department wide and thus are automatically an integral part of THIS SYLLABUS.

To read these additional policies, procedures and resources, log in to your course in CANVAS and look at the always up-to-date material listed under the

University Policies and Resources Module

for further information.

In case of disagreements between the student and the university faculty and staff, students are responsible for full knowledge of the provisions and regulations pertaining to all aspects of their attendance at MSU Denver, and should familiarize themselves with the policies found in the

University Policies and Resources Course Module

FYI:

*For this course you are part of the
COLLEGE OF LETTERS, ARTS, AND SCIENCES (CLAS)
and the
DEPARTMENT FOR EARTH & ATMOSPHERIC SCIENCES (EAS)*