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Course Description

Earth science encompasses the geology, chemistry, biology, and physics of our planet. Environmental degradation, natural resources, energy, climate change, and geologic hazards are among the most pressing issues facing society in the 21st century. This course offers an introductory survey of earth science through a survey of geology, oceanography, meteorology, hydrology and the study of the solar system, with a focus on terrestrial-oriented processes that shape and have shaped our planet, and on interrelationships among the hydrologic cycle, the tectonic cycle, and the rock cycle. Topics include formation, evolution, structure, and composition of the Earth, plate tectonics and the rock cycle, water and nutrient cycles, climate change, energy and policy.

Required Text, Online Homework Package and Laboratory Kit:

- Tarbuck, E.J., Lutgens, F.K., and Tasa, D., 2014, *Earth Science eText with Mastering Geology*, 15th Edition, Prentice Hall, ISBN 9780134673844. (note: You can buy a used 14th edition hard copy book inexpensively, but you must purchase access to Mastering Geology (see below) separately.
- Access to *Mastering Geology* (www.masteringgeology.com), an online homework resource. *New* books purchased with the ISBN listed above (or through the college bookstore) will have an access code for Mastering Geology.
- Earth Science Laboratory Kit available from the MBU bookstore or from Hands-on-Labs via the following link:
- <https://myhol.holscience.com/enroll/nvzb-ptsd-crtx-rmtv>
- Common household items (baking soda, vinegar, glass jars, table lamps with incandescent (not fluorescent) light bulbs as needed to complete labs not covered by the Hands-on-Labs package.

Note: Every student must register and purchase access to Mastering Geology and obtain a kit to Hands-On-Labs. Please check email/canvas announcements at the beginning of the class for correct access codes to receive credit in the course.

Note: An access code to Mastering Geology is included in the text price with e-books purchased through the publisher at www.masteringgeology.com. If you wish to have a paper hard copy book (for taking notes, etc.) you have the option of purchasing a loose leaf copy when signing up for Mastering Geology.

Warning: If you buy a used or Kindle copy of the book, you need to purchase access to Mastering Geology separately at www.masteringgeology.com. However, in most cases it is more cost effective to buy a used book and purchase access to Mastering Geology separately.

Further Details on how to sign up for Mastering Geology or how to purchase an ebook and lab package will be posted on the Course Canvas Page and emailed to students a few weeks before the begin of the course.

Requirements: You are required to complete weekly homework assignments on *Mastering Geology*, nine lab assignments, three term exams, and participate in group discussions.

This class requires that you are comfortable and knowledgeable working in an online environment. Specific requirements include:

- A PC computer. Most assignments cannot be completed on a phone or tablet, you need a full laptop or desktop computer (Mac, Windows, Chromebook)
- A high-speed broadband internet connection (**a dialup or cell phone connection is insufficient for this class. Likewise, satellite connections may not offer satisfactory connectivity**), or willingness to travel and use campus computer labs or wifi at your local library or school. Your computer should have all common web animation and interactive software (PDF reader, Flash player, Quicktime, Shockwave player etc.) installed and up to date. The instructor cannot troubleshoot computer problems. Most assignments cannot be completed on a phone or tablet, you need a full computer with interactive plugins. Note many browsers disable Flash for security reasons, you may need to enable it on the websites for the course.
- A working installation of Google Earth. Google Earth requires a Mac or Windows or Chromebook computer, and has some minimum hardware/software requirements to work efficiently (it will hang on an older computer). You will be expected to open map files (usually with an kml extension). Some antivirus packages block certain file types and you need to know how to work with your antivirus program to enable these.
- Access to a standard word processing program, such as Word or Google Docs
- Routine use of your MBU email account (checked daily)
- Routine use of MBU's Canvas and Piazza discussion forum program (checked every other day, minimally).

- Access to Microsoft Powerpoint or Powerpoint viewer (free).

Class Participation: Participation in this class is self-motivated. I am here to coach you, but I will not be traditionally teaching you through the semester; you are, in a way, teaching yourself. Treat this class as you would a regular physical class, and set aside time to go to “lecture” and study the materials posted. Contact me if you are having problems understanding the course subject matter.

Course Discussion and help site:

This term we will be using Piazza for class discussion (graded discussions each week as well as introductions and general questions). The system is highly catered to getting you help fast and efficiently from classmates or the professor.

You can sign up for piazza via this link:

https://piazza.com/mary_baldwin_university/fall2020/int165 (access code INT165)

Homework Assignments

Each week, one homework set is assigned on Mastering Geology that covers the material covered in the sections assigned that week. These homework problems should be taken after you have read the assigned material and reviewed the notes or presentations posted for that week (see “Resources” below). They consist of multiple-choice, true and false, and fill-in-the-blank questions that may contain illustrations and photographs, animations, short movies and map exercises in Google Earth. Each homework set will be available the entire week, and is due on Saturday at 1159 pm. You may NOT work with another individual on homework problems, however you can ask questions on the Piazza discussion board for the class. See the schedule for details. The lowest homework score will be dropped from the final course grade calculation. This means you may skip, or do poorly on one homework set.

Homework sets will be assigned every week and will be available on Mastering Geology and will be due every Saturday at 11:59 PM. The first assignment is due Saturday, August 29, 2020, 11:59 pm.

Note: See email response policy below. I will most likely not be able to respond to emails at the last minute about the assignment, especially on a Saturday afternoon/evening! Get started early so if you have questions, I can respond. Please use the Piazza discussion forum for sharing questions with your classmates.

Exams:

Three exams will be given which will be administered through Canvas. Each exam will cover material posted online and in your textbook, and consist of multiple-choice, fill-in-the blank, essay, true-false questions and other formats as appropriate.

Illustrations/videos and photographs may be included in the questions. Because these will be online exams, you will be able to use your study materials for reference. You may NOT work with another individual or ask for help in student help sites such as Chegg or Coursehero. Each exam will be open only for 120 minutes. You will have **one** attempt to take each exam, and must do this in one sitting, so allow yourself enough time (and privacy) to complete it. Details are included in the schedule and in the introduction for each exam.

Example: Exam 1 will cover material from Chapters 1-6. This exam will be available on Canvas from Sept. 24 through Oct 1, but once you start it, you will have 120 minutes to take the exam.

A scientific calculator is recommended and necessary for some assignments or exams (you may use the on screen calculator on your computer or phone app).

Laboratory: The laboratory section of the course corresponds to 225 points (20%) of your course grade and are to be completed via kits from Hands-On-Labs at home or instructions posted on Canvas. Each laboratory consists of exercises experiments you conduct at home and submit your results via the Hands-On-labs platform or Canvas (see announcements for the details on each lab).

The laboratory component of the course is designed to reinforce concepts introduced in the textbook and online assignments. The kits include chemicals, samples and supplies to conduct the lab in your home. There will be nine scheduled labs during the semester.

Each lab has a lab report section that is to be turned in electronically via the Hands-On-Labs site *or* Canvas (see announcements) on the Sunday following each lab at 11:59 PM.

Group Discussions

Each person in class will be put into a discussion group of about 7-10 students. You will not be working as a group on these topics, but rather within your group. Each group will be assigned a distinct question regarding two topics throughout the semester. The question will be posted at the beginning of the week. Each discussion question will be open over a three-week period.

There are two steps to the discussion questions. First, you will need to create a written, individual response (**1st response**) to the question and turn in this response as an assignment. Your individual response should be about 2-4 sentences. You will receive 0 to 30 points for your response (0 = no response, 1-17 = poor/deficient, 18-20 sufficient, 21-23 fair, 24-26 good, 27-30 great)

During the second week of the discussion question, you will need to do two actions: post your response 1 to your group's discussion board on Piazza, *and* write a response (2nd response) to someone else's post (within your group's discussion topic) by asking a question, making an observation, or commenting on his/her conclusion. Your response should again be about 2-4 sentences (see example discussion below). You will receive 0 to 10 points for your response (0 = no response, 1-5 = poor/deficient, 6-7, sufficient, 8 good, 9-10 great). Responses will be due on Sunday at 11:59 pm.

Make sure to keep your individual and group responses clear, concise, well written, and professional. I will be monitoring and commenting on your postings as they proceed. Avoid discussions that do not add information (such as posts along the lines of "I agree with you" or "very nice work")

Example question (Q1): Kilauea is considered the most active volcano on Earth, yet it is unlikely that a human would be hurt or killed by its eruptions. How is this possible?

G Clooney Response 1: Kilauea is located on the big island of Hawaii and is a shield volcano. It erupts basaltic lava, which is fairly runny and does not erupt explosively. The lava runs from the volcano's summit downhill to the ocean, but not so fast or unpredictably that people can't get out of the way. Most of the damage done by Kilauea includes burning structures and vegetation.

M Damon Response 2 to G Clooney: This basaltic lava is not very viscous, so it lets the gases within the magma escape easily instead of blasting material all over the place like in the Mt. St. Helens eruption in 1980. Other hazards associated with shield volcanoes include: getting struck by volcanic material if you are too close to it during an eruption; gases and ash that can cause both health problems and climate change and the destruction of pastures and houses.

Resources

Supplemental study materials will be provided by your instructor and posted on Canvas. Every week, the material will be posted for the chapters assigned in different "modules" that resemble a weekly schedule of an in-class lecture.

Some sections of the book will be complemented by voiceover PowerPoint lectures, videos or reading materials and will be uploaded to or linked from Canvas. These materials are not a substitute for the class textbook. They will provide both a summary of some of the chapter material and presentation of content not covered in the textbook. Many of the tables and illustrations from the text will be referred to but not included, so it will be important for you to refer back to the text material. Geology is a very visual

subject, and the illustrations, photographs, and video clips are equally relevant as the written material. In many cases, videos from external sources (e.g., National Geographic, Discover channel, etc. are more useful than instructor lectures so an emphasis will be placed on quality materials already available elsewhere).

Lecture Outlines: Bulleted outlines for each chapter are also found in Canvas in each weekly module. These should be a nice beginning for your own notes.

Expectations for Online Behavior

College is a professional environment, and there are many “unwritten rules” that are expected of you interacting with others online. Here are some of them. Failure to follow these rules may result in disciplinary action or, at the very least, lowered respect from your instructor and fellow students.

Email/Discussion Etiquette:

- **We'll be conducting all class-related discussion on Piazza this term.** The quicker you begin asking questions on Piazza (rather than via emails), the quicker you'll benefit from the collective knowledge of your classmates and instructor. We encourage you to ask questions when you're struggling to understand a concept—you can even do so **anonymously**.
- Please use Piazza to post a question to the class or the professor, such as questions about homework or assignments. (do not use Piazza to discuss personal matters (e.g., if you want to discuss an upcoming conflict or missed deadline with the Professor, please use email)).
- You are expected to write as you would for any professional correspondence. Email/Discussion board communication should be courteous and respectful in manner and tone. Do not send emails that are curt or demanding.
- **Do not expect an immediate response via email** (normally, a response will be sent within one business day). If your email question is sent at the last minute it may not be possible to send you a response before an assignment is due or a test is given. Please use Piazza for common questions and you will get a faster response.
- Use full, complete words and sentences, and use your spell/grammar checker.
- Before emailing the instructor, think about why you are sending an email. Are you asking something that could easily be checked if you took a few extra steps yourself? Is this something a classmate may know the answer to and you can ask this on Piazza? Do your research before asking questions that you can look up on the course Canvas site, the syllabus or on Piazza.
- Please think before posting questions to Piazza or sending an email to the professor. Questions such as “when is the homework due?” may show a lack of resourcefulness. If, after searching you can't find the answer, then by all means do post the question “I looked on Canvas and the syllabus, and unfortunately I

could not find the due date for the homework." A student may know the answer or the professor will respond.

Course Expectations: You are expected to read the assigned material and the materials posted online, participate in class group discussions and ask questions. You are required to complete the assigned readings, submit assigned online homework problems, and complete the exams. You are responsible for **checking your MBU email at least once daily (including weekends)**; you are also expected to check Canvas regularly where I will post information relevant to the course (e.g., scores, slides, videos, equations, exam information, links, etc.).

Assignment Deadlines: The deadlines shown on the schedule are firm. Please contact me ASAP in case of extenuating circumstances or severe medical conditions. INT 165 is a 4 credit course. Generally, one credit is given for 3 hours of work each week inside and outside of a regular class. Consequently, expect to spend about 4-5 hours each week on assignments for the class, in addition to time to read and study. Students who fall behind find it hard to catch up.

Exams or homework assignments missed for valid and verifiable reasons will either be made up with an alternative exam or homework assignment or you will be given the average of the other two exams/assignments at the discretion of the professor. Valid reasons include: 1) illness or injury requiring medical care and instructions to rest and not attend work/class. You should have a note from a healthcare provider. 2) Personal emergency (such as a death in the family) requiring absence from university activities and notification of the Dean of Students. Other circumstances not covered by the above, at the instructor's discretion. If you feel your absence should be excused, send me a note or email no later than 24 hours prior to the missed deadline or assignment due date. Social events, vacations and trips outside of scheduled University holidays, etc. are not excusable absences. Also, all assignments/homework problems will open for several days so you should plan ahead around religious holidays, your job, childcare, athletic events and the like.

Grading: All course work is to be performed in accordance with the Honor Code of MBU. Your grade will be determined according to the following points scheme

Component	Possible Points
Exams (Three exams, each exam worth 100 points)	300
Homework (12 assignments, each worth 35 points)	420
Group Discussions (2 topics)	40
Laboratory (9 labs)	225
Total Course Points	985

Your final course grade will be determined according to the following scale:

A	percent > 93 %
A-	90 % < percent < 93 %
B+	87 % < percent < 90 %
B	82 % < percent < 87 %
B-	80 % < percent < 82 %
C+	77 % < percent < 80 %
C	72 % < percent < 77 %
C-	70 % < percent < 72 %
D+	67 % < percent < 70 %
D	62 % < percent < 67 %
D-	60 % < percent < 62 %
F	percent < 60.0%

INT 165 Grade Calculation Sheet

Assignment	Points possible	Your Score
Exam 1	100	
Exam 2	100	
Exam 3	100	
Online Homework 1	35	
Online Homework 2	35	
Online Homework 3	35	
Online Homework 4	35	
Online Homework 5	35	
Online Homework 6	35	
Online Homework 7	35	
Online Homework 8	35	
Online Homework 9	35	
Online Homework 10	35	
Online Homework 11	35	
Online Homework 12	35	
Online Homework 13	35	
	Drop Lowest Homework Score	< >
Lab 1	25	
Lab 2	25	
Lab 3	25	
Lab 4	25	
Lab 5	25	
Lab 6	25	
Lab 7	25	
Lab 8	25	
Lab 9	25	
Discussion 1	40	
Discussion 2	40	
	Total	

Tentative Course Schedule:

	Week beginning:	Topic	Chapter
1	Aug 24	Introduction to Earth Science Earth Materials – Minerals	1 2
2	Aug 31	Rocks Lab 1: Igneous Rock Identification	3
3	Sep 7	Plate Tectonics Earthquakes Lab 2: Plate Tectonics	4 5
4	Sep 14	Volcanoes Crust Deformation and Mountain Building Lab 3: Earthquakes and Volcanoes	6 7
5	Sep 21	Weathering Exam 1 – Available Sept 20, Due Sept 27 Lab 4: Sedimentary Rock Identification	8
6	Sep 28	Water and Groundwater Glaciers, Deserts, Wind Discussion one 1st Response Due Oct 3 Lab 5: Introduction to Topographic Maps	9 10
7	Oct 5	Geologic Time Earth’s Evolution Discussion one 2nd Response Due Oct 10 Lab 6: Streams and Groundwater	11 12
8	Oct 12	The ocean floor Ocean water and life No Lab- Fall Break	13 14
9	Oct 19	Dynamic Ocean The Atmosphere Exam 2 – Available Oct 18, Due Oct 25 Lab 7: Streams and Groundwater	15 16
10	Oct 26	Moisture, Clouds, Precipitation Air Pressure and wind Lab 8: Barometric Pressure	17 18
11	Nov 2	Weather Patterns and Storms Lab 8: Barometric Pressure (continue) Discussion Two 1st Response Due Nov 7	19
12	Nov 9	Climate Change Discussion Two 2nd Response Due Nov 14 Lab 9: The Greenhouse Effect	20
13	Nov 16	Introduction to Astronomy Our Solar System Beyond our Solar System	21 22-23 24

	Nov 22	<i>Thanksgiving week – no assignments due</i>	
14	Nov 30	Exam 3 -- Available Nov 29, Due Dec 4	

Note: The syllabus and course schedule is subject to change with notice. Exam dates, topics and discussion deadlines may change as the course progresses (such as, but not limited to, if there is an event in the news that is related to the course (e.g. a hurricane or earthquake) that warrants a change in the schedule to allow proper discussion). Such changes will be announced through Piazza or Canvas.