2487 - **GEOL 5, HISTORICAL GEOLOGY with lab –** fall 2020

Professor: Dr. **Alessandro Grippo**, Ph.D.

Mail Box: in LA 102 e-mail: grippo_alessandro@smc.edu
Webpage: http://grippo.pazsaz.con

Class Hours:

LAB/LECTURE: ***Monday and Wednesday 2:30–5:35*** *online*
FINAL EXAM: ***Wednesday, December 11, 2019, at 3:30p*** *online*
Office Hours: ***Monday and Wednesday 7:10-8:05*** *online*

Course description

This course is an introduction to the history of Earth and its evolution including surface environments, atmosphere, oceans, and life. Sedimentary rocks are studied for stratigraphic relationships, environmental indicators, and biologic significance to reconstruct the geological and biological evolution of Earth over time. Numerical methods, like geochronology, are also employed to assign absolute ages to past environments. The combination of both relative and numerical methods to the study of plate tectonics and geologic structures will allow the student to understand how Earth history is reconstructed. A particular emphasis is placed on the study of North American sequences.

Course objectives

Upon completion of this course, the student will be able to:

- Explain the sequence of the most important events, geological and biological, that have characterized the history of our planet.
- Comprehend, explain, and put in perspective the dynamics of present day change.
- Apply the theory and the working principles of the tools that are used in the reconstruction of the history of our planet.

Student Learning Outcomes

- Students will be able to identify the major stages in Earth history, including the formation of continents and oceans, the supercontinent cycle, and the evolution and extinction of life as it correlates with climatically driven ecological changes.
- Students will understand how the scientific method was applied to determine the Geologic Time divisions in Earth history.
- Students will see the Geologic Time Scale as a global stratigraphic column dividing Earth's history into distinct periods of time using relative dating, including index fossils, and absolute dating techniques.

Textbooks

Lecture: 1 - Steven M. Stanley, Earth System History, 4th edition, W. H. Freeman & Co., New York
2 - J. R. Nudds and P. A. Selden, Fossil Ecosystems of North America, 1st edition, University of Chicago Press
Lab: 1 - Brice Levin Smith, Laboratory Studies in Earth History, 10th edition, McGraw Hill.

All three textbooks are recommended. Used copies of the two lecture textbooks are generally fine. If you have an older edition, you will be responsible for finding the proper material on the right page on your book. But when it comes to the Lab manual, be aware that its pages are detachable and that they will have to be ripped and turned in to me at the end of each Lab session. Many students during previous semesters bought used copies of the lab manual that were missing most of the lab pages; as a consequence, they were left without the proper exercise pages and study materials. It is your responsibility to have a complete set of copies before the lab exercise.

Required Materials

Lecture: all lectures will be conducted online via Canvas chat. Students should always have access to Canvas. will post relevant information, quizzes, exams on Canvas

Exams: exams will be online only (on Canvas), at the time of class and for the duration of the class onl Absolutely no calculators, tablets, computers, electronic translators, mp3 readers, earphones or any electron device are allowed.

Recommended Computer Skills and Technology Requirement

This class will be taught online using Canvas, but you will still need access to a computer to work with some the resources I made available on my website (http://grippo.pazsaz.com). The web page is fully accessible fro both Pc- and Mac-based operative systems, and optimized for Firefox. Please be aware that SMC has taken dow momentarily all of their faculty web pages, and I had to transfer all of my files on a private server using commercial domain. If you find any broken link, or anything essential that does not work properly, please let m know as soon as possible.

Methods of Presentation

Lecture and Discussion. I will be going over information that is in the textbook by using PowerPoint slides that a available on my website. I will be using Canvas of course and will be providing you with the relative links m webpage. Course material is supplemented with discussions of current geological news, which includes geolog hazards and recent discoveries

Grading System

The total grade will be assigned based on exams, labs, assignments, quizzes, homework, and class participation. In order to be able to pass the class it is strongly recommended that you work on all of the assignments and take ALL exams.

Exams - You will be tested on the materials covered during lectures, labs, in assigned readings (and videos when pertinent). The exams will include a mix of multiple choice, short essay, true-false, figure and map interpretation, yes/no, and short-answer questions. The exams will include question from BOTH lecture and lab. Sample questions taken from actual exams can be found on my web page. All exams are non-cumulative and will contain questions for extra credit. This will be the ONLY source of extra-credit for this class.

There will be two mid-term exams (**20% of the grade**) and one final, cumulative exam (**20% of the grade)**. Individual exams will be graded on a 0-100 scale for simplicity and the score will then be converted. The time allowed for an exam is 90 minutes. If you miss any single exam, its maximum score will be subtracted from your grade, and you will likely not going to be able to pass the class. Exams are closed-books; do not use texts, notes, calculators or dictionaries of any sort; absolutely no cell phones, iPods, iPads, blackberries, headphones, Bluetooth or any other kind of electronic device.

Labs - As a rule, there will be a lab on every Wednesday the class meets; sometimes we may switch to Mondays (changes will be announced in Canvas); occasionally, we will be working on more than one lab, to reach a total of at least 15 different ones. Labs will count for **50% of the grade**. Lab work is strictly individual and not group work. If a student is found copying a lab rather than working personally on it, she/he will get a 0 (zero) on that lab. Please note: it is important that you work on all of your labs: if you miss a lab and you do not make it up, the relative score will be *subtracted* from your grade. You can make up a lab for full score after the due date only if you have a doctor's note, a jury duty note, a police note or any other official document that can justify your absence. If you cannot provide such proof, you can still make up the lab for 50% of its value if you turn it in within a week. After one week still work on it for practice and to prevent points from being subtracted. Individual labs will be graded on a 0-20 scale.

Homework Assignments, Participation, and Quizzes – There might be a few homework assignments, mostly in order to strengthen certain skills or reinforce a few concepts. The relative score will be integrated in the quizzes score. Homework must be **turned in at due time**, no exceptions. Late homework will be accepted only as a partial fulfillment of class requirements within the first week (50%). If you miss any assignment, its score will be *subtracted* from your grade.
Quizzes will be given to the class, usually on Mondays and with at least one week advance notice. Quizzes will be mostly (but not only) on assigned readings from "**Fossil Ecosystems of North America**". Overall, quizzes, home assignments and homework will count for **10% of class grade**. There are **no make-ups** for quizzes, but points will not be subtracted if you miss any of them.

Class Work and Participation – Class work and participation constitutes **10% of the final grade**. Participatic does not mean simply attending class regularly and on time but rather constitutes a general assessment of yo effort and activities in the classroom.

Method of Evaluation - The final score is calculated out of 1000 points (from assignments, exams, quizzes, labs, A&P)

Two mid-term exams will count for 20% of the final grade	200 points
The final, cumulative exam will count for 20% of the grade	200 points
Lab assignments will count for 50% of the grade	500 points
Quizzes, home assignments, participation will count for 10% of the grade	100 points
	1000 points

Grading scale:

FINAL GRADE:	A: 901 - 1000 points	SINGLE EXAMS:	A: 90 - 100 points
	B: 801 - 900 points		B: 80 - 90 points
	C: 701 - 799 points		C: 70 - 79 points
	D: 601 - 699 points		D: 60 - 69 points
	F: 600 points or less		F: 60 or less

Academic integrity and policies

The academic honesty policy of Santa Monica College will be strictly enforced at all times.

Students with disabilities

I encourage students requesting disability-related accommodations to contact Disabled Student Services as soon as possible. I will work with you and the Center for Students with Disabilities to provide appropriate and reasonable accommodations. An early notification of your request for test-taking and/or other accommodations is necessary to ensure that your disability related needs are addressed appropriately; testing accommodations cannot be applied retroactively. DSPS office is located in the Admissions/Student Services Complex, Rm 101, and the phone numbers are (310) 434-4265 and (310) 434-4273 (TDD).

Campus Emotional Support for Students

Over the course of the semester you may face difficult circumstances beyond your control, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down or depressed, or having difficulty concentrating. These challenges may create barriers to learning or may make it difficult for you to meet some of the course requirements. If you or someone you know is suffering these or other similarly difficult circumstances, please reach out for support. The staff and faculty of Santa Monica College want you to succeed academically and care about your wellbeing. You may contact the College's Center for Wellness and Wellbeing (LA 110, 310-434-

4503), which provides short-term mental health services, community referrals, and a 24/7 emotional support line for students, 800-691-6003. Or, if the situation is an emergency, you may contact the SMC Police Department (310-434-4000 or the SMC LiveSafe app). Please contact me if you want to discuss which SMC service or support might be best for you.

International Students

As an international students, you are subject to a variety of rules and obligations. One of them is that you must maintain a certain number of units. In the past, a few students chose to be enrolled in the class but not to participate in it, even accepting a failing grade, as long as they could stay enrolled. Please, do not abuse the system, and be aware that you will be treated as any other student: you can be dropped from the class for lack of attendance like any other students, and you would have to face the consequences of your choices. Be responsible.

Emergency Preparedness

The safety of students at SMC is a priority. Please note that emergency procedures are posted in every classroom. Also, procedures for various emergencies are delineated on the SMC website: http://www.smc.edu/StudentServices/EmergencyPreparedness/Pages/Emergency-Preparedness.aspx Take time to familiarize yourself with these procedures now, when knowledge of what to do is the most effective.

Make up exams

As a policy, there will not be make-up exams unless there is a medical or legal reason; in all cases, a note from a doctor, a hospital, a court, or the police is required. If you know you will be missing a class for a religious holiday, it is YOUR responsibility to let me know as soon as possible, and in any case at least two weeks before the day you will be absent. In case you need to take a make-up test, the test will be in a different format, and will consist in a series of short essay questions.

Some basic tips on how to succeed in this class

1. The first and most important point is: if you do not understand something, ask questions, as me to repeat. You are here to learn and the professor is there to help you in this process.
2. Time spent in class is used to learn about the subject, so do not waste it. Education is alway worth investing in, even if your ideal major is different. The more you know the more you w be able to defend your ideas in society
3. Give yourself adequate study time per week for each one unit of a course. Review notes as soon a possible after lecture in order to finish incomplete diagrams and sentences while you still remembe what they mean.
4. If you are having difficulties with the course, ask me for help or advice early in the semeste Do not coast through most of the course and then, with a week or two remaining in the term, ask me what you can do to improve your grade. I strongly urge you to seek help if your firs exam grade indicates you are doing poorly.
5. An ethical note: looking at a fellow student's paper during an exam is cheating; using crib notes cheating. Consequences of cheating will be an automatic "F" and a report filed with the Office the Vice President for Student Affairs and Dean of Students.
6. Do not be late to class.
7. Coming to class and taking notes is essential for passing the class. Historically, those who cu class, fail the class.

Biographical Sketch of Alessandro Grippo, Ph. D.

Dr. Grippo is an Associate Professor of Geology in the Department of Earth Sciences at Santa Monic College, where he has been teaching since 2001, when he was still a graduate student at the Universit of Southern California.

He has taught all general education courses offered at SMC, Physical Geology, Oceanography, Eart History/Historical Geology and Field Geology; in addition, he taught the same or similar classes, an Environmental Geology, at other colleges in the greater Los Angeles area; senior level and graduat classes in Sedimentology, Stratigraphy, Field Geology, and Natural Disasters; and also an advance 500-level seminar in Stratigraphy, his specialty.

He keeps on working on different scientific projects and he presented his work at internation meetings in the US, the UK, Italy, France and Canada. His research interests as a scientist includ stratigraphy and sedimentology, oceanography, geomorphology, regional geology and global an climate change. In particular he is doing research on how to extract and process information abou environmental change and ancient climates from the sedimentary rock record.

Dr. Grippo obtained his Philosophy Doctor degree from the University of Southern California (USC) Los Angeles by discussing astronomically-related climate change through a geological an mathematical analysis of a sedimentary rock record from the Cretaceous Period. Between his M.S an his Ph.D. he has been working in the oil industry as an exploration and well-site geologist. During h years at SMC he was also a NASA-JPL faculty fellow. He is also currently an external field instructor fo the Desert Institute of Joshua Tree National Park, where he leads different field explorations of th Mojave desert, from Death Valley to Joshua Tree itself.

As a reminder

We have FIXED APPOINTMENTS for exams, labs and quizzes.
It is YOUR responsibility not to miss them

Exams must be taken on the scheduled day/time, and can only be made up with an official excuse

Labs can be made up with an unofficial excuse for only ½ of their value, if within a week from due date

Quizzes cannot be made up if not taken within the 30 minutes allowed on due date

As a rule (with exceptions denoted below):
- every Tuesday there is either a quiz or an exam
- every Thursday there is a lab

Tentative schedule of lessons (If necessary, variations will be detailed in class)

Week	Date	Topic	Book Chapter(s)	Exams
1	August 31	Introduction; Plate Tectonics	1 – 2 - 8	
	September 2	Plate Tectonics	1 – 2 – 8	
2	September 7	*Labor Day (campus closed) – no class*		
	September 9	Chemistry review. Minerals and Rocks	2	
3	September 14	Chemistry review. Minerals and Rocks	2	quiz 1
	September 16	Labs 1 and 2		
4	September 21	Diversity of Life	3	quiz 2
	September 23	Environments and Life	4	
5	September 28	**exam 1**		**EXAM 1**
	September 30	Lab 3		
6	October 5	Sedimentary Environments	5	quiz 3
	October 7	Lab 4		
7	October 12	Correlation & Dating of the Rock Record	6	quiz 4
	October 14	Lab 5		
8	October 19	Evolution & the Fossil Record	7	quiz 5
	October 21	Lab 7 (not 6!)		
9	October 26	Plate Tectonics	8	quiz 6
	October 28	Lab 8		
10	November 2	**exam 2**		**EXAM 2**
	November 4	Lab 6		
11	November 9	Continental Tectonics and Mountain Chains	9	quiz 7
	November 11	*Veteran's Day (campus closed) – no class*		
12	November 16	Major Chemical Cycles	10	quiz 8
	November 18	Lab 9		
13	November 23	The Hadean, Archean and Proterozoic Eons	11 – 12	quiz 9
	November 25	Labs 10 and 11		
14	November 30	The Paleozoic World	13– 14 - 15	quiz 10
	December 2	Labs 12 and 13	13– 14 - 15	
15	December 7	Labs 14 and 15		quiz 11
	December 9	**exam 3, part 1 (non-cumulative)**		**EXAM 3/1**
16	December 14	Labs 16 and 17		
	December 16	**exam 3, part 2 (cumulative)**		**EXAM 3/2**