

**SUNY Cortland**  
**Department of Geology**  
**GLY 262 - Historical Geology**  
**Spring, 2019**

Credit Hours; 4	In Instructor: Dr. Christopher McRoberts
Lecture: 11:30-12:20 Mon Wed, Fri.	Office: 1010 Bowers Hall
Location: Bowers Rm. 1011	Phone: 753-2925
Laboratory: Wed 12:40-3:30, Bowers Rm. 1011	E-mail: <a href="mailto:mcroberts@cortland.edu">mcroberts@cortland.edu</a>
Web page: <a href="http://paleo.cortland.edu/class/historical">http://paleo.cortland.edu/class/historical</a>	Office Hours: TU: 2-4, WE: 3-5

### **Required Text**

Prothero, D. R. and Dott, R. H. 2010. *Evolution of the Earth*, 8<sup>th</sup> ed. McGraw Hill.

### **Course Description**

(S) Study of the changes of Earth and life through geologic time. Evolution of the continents, ocean basins and major life forms throughout Earth's history with an emphasis on stratigraphic and fossil record. Not open to students with credit for GLY 172. Prerequisite: GLY 261. Lecture/Lab Hours: Three lectures, one three-hour laboratory, student presentations, required field trip. Fulfills: GE 2 or GE 13; LASR; PRES. (4 cr. hr.)

### **Course Overview**

This course is an introduction to the major events that had a profound impact on the changing physical and biologic landscape throughout Earth's history. The course will stress both theory and facts concerning the history of Earth and life, and more importantly, how we know it. The course is designed to give the student a broad perspective and appreciation of Earth's history and serve as a stepping-stone to more advanced courses in Earth Science.

### **Course Objectives:**

The main objective of this course is to provide the student with the necessary tools to interpret and understand the processes leading to the complex history of the Earth and its contained biota. An additional goal is to provide an overview of the major events in Earth's history that have had a profound effect on Earth's physical, chemical, and biologic environment. At the end of the course you should not only be able to observe the processes acting today which have shaped the Earth over time, but be able to recognize the result of such processes and possibly others which can be read in the rocks themselves.

At the end of the semester the student should be able to ...

1. Demonstrate the concept of geologic time as recorded in the geologic and paleontologic record.

2. Demonstrate understanding of geologic principles and the ability to recognize and interpret ancient environments as determined from stratigraphic sequences.
3. Demonstrate an understanding of the basic principles and historical development of plate tectonics.
4. Demonstrate an understanding of the organic evolution and its major faunas and biotic events of Earth's history.
5. Demonstrate an understanding of the major physical and chemical changes of Earth's history.
6. Demonstrate the ability to conduct literature-based research and present such work in both written and oral formats using appropriate technology.

In addition, as a SUNY Cortland General Education Presentation Skills (*PRES*) course, the student is expected to develop proficiency in oral discourse and demonstrate the ability to evaluate an oral presentation of their student peers according to established criteria.

### Grading and Assessment

To pass this course you must successfully complete the lecture and laboratory portions of the course as well as the required paper & oral presentation of the project. Exams are a mixture of multiple choice, short answer and essay type questions. Your grade will be based on the following formula:

2 Hour Exams (20% each)	40%
Final Exam*	20%
Laboratory (labs & quizzes)	20%
Project (Paper & Presentation)	20%
Total	100%

\*The final exam **WILL** contain approximately 1/3 cumulative material from previous exams.

### Attendance Policy

You are expected to attend all lectures and laboratories; however, attendance *per se* will not be part of your grade assessment. Each student, however, will be responsible for material missed and any assignments due on the day of an absence. Unless otherwise excused (see below) make-up quizzes and exams will not be allowed. Excused absences include your illness, a death or other family emergency, **and must be documented.**

### Academic Integrity Statement:

You are expected to abide by the SUNY Cortland standards of academic integrity (Chapter 340 of the College Handbook). Students will not cheat or plagiarize in this course nor assist others to do so. Plagiarism, a serious academic offense, is defined as expropriating the ideas of others and using them as one's own without due credit. Students who cheat in examinations or plagiarize in this course will be disciplined in accordance with university rules and regulations.

## Students with Disabilities

If you are a student with a disability and wish to request accommodations, please contact the Office of Student Disability Services located in B-1 Van Hoesen Hall or call (607) 753-2066 for an appointment. Information regarding your disability will be treated in a confidential manner. Because many accommodations require early planning, requests for accommodations should be made as early as possible.

## Lecture Topics (subject to much change)

Topic	Readings
Introduction to Historical Geology	Chaps. 1, 2
Life, diversity, and fossils etc...	Chap. 2
Evolution, Darwin, species, and extinction	Chap. 3
Geologic time: Relative methods	Chap. 4
Stratigraphic and biostratigraphic principles	Chap. 4
Geologic time: Absolute methods	Chap. 5
Earth's origin	Chap. 6
Evolution of early Earth: The Archean	Chaps. 7, 8
Proterozoic Earth	Chap. 8
The origin of life and the "age of bacteria"	Chap. 9
Proterozoic life and the Ediacara Fauna	Chap. 9
Paleozoic-I The Cambrian radiation and E. Paleozoic life	Chap. 9
Paleozoic-II: Early Paleozoic geologic events	Chaps. 10, 11
Paleozoic-III: Middle & Upper Paleozoic geologic events	Chaps. 12, 13
Paleozoic-IV: Middle & Upper Paleozoic continued	Chaps. 12, 13
The Mother of all extinctions	TBA
Mesozoic-I: Geologic events	Chap. 14
Mesozoic-II: Marine biotas	Chap. 14
Mesozoic-III: Terrestrial biotas	Chap. 14
Cenozoic-I: Geologic and paleoclimatic events	Chap. 15
Cenozoic-II: Biotas and the rise of mammals	Chap. 15
Cenozoic-III: The emergence of humans	Chap. 16

## Important dates

Wednesday February 27: Exam 1

Wednesday April 10: Exam 2

Saturday April 20: All day field trip (8:00-5:00)

Monday May 13: Final Exam (11:00)