

Syllabus

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Instructor Information

Enabled: Statistics Tracking

Instructor Contact Information: Dr. Mark D. Uhen; Office location, 3414 Exploratory Hall; Office Hours, 10:30-11:30 Mondays or by appointment; email: muhen@gmu.edu; phone; 703-993-5264.

Office Hours will be held via Zoom:

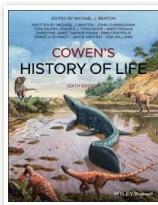
<https://gmu.zoom.us/j/6898465135?pwd=Y2FRWWY0WStGbzVZOUlEVDIQRExlZz09>

Location and Time : Exploratory Hall 1309, Monday, Wednesday and Friday, 9:30-10:20 am.



History of Life

Enabled: Statistics Tracking



Title	History of Life
Author	Richard Cohen
ISBN	9781119482215
Publisher	Wiley
Binding	Available new, used, or digital
Type	Print
Price	\$38.75
Required	



GEOL 134: Evolution & Extinction

Enabled: Statistics Tracking

GEOL 134: Evolution & Extinction

STUDENT RESPONSIBILITIES

Students are expected to have read the syllabus and be familiar with expectations, due dates for assignments, and dates and times for exams. The syllabus will be posted on the Blackboard system and students are expected to pay attention to any changes that are made over the semester.

Group study and note taking : Students in the class will be divided into groups. One group will be responsible for posting notes from lecture to the class Lecture Notes Blackboard wiki before the next class period. Each group will be expected to contribute. Students are also expected to use their group to study for quizzes and exams. Additional assignments will also involve group activity.

Communication: Students are expected to check their Mason Blackboard system regularly for information about the course. Students are expected to have read the syllabus and be familiar with expectations for assignments, and dates and times for quizzes and exams. The syllabus, including the schedule is posted on Blackboard and students are expected to pay attention to any changes that are made over the course of the semester. Failure to be aware of information posted to a student's Mason Blackboard is not a valid excuse for missing assignments, or not following instructions, tests, presentations or student responsibilities of a student. This course operates under the rules of the [George Mason University System and Code](#). Please be familiar with the code. Quizzes are given in a closed book and your answers must be your own.

Students are expected to be respectful of the instructor and each other in class. Demonstrate that respect by please, not talking out of turn, turning off your cell phone and instant messaging during class, and do not disturb class if you enter late or leave early.

If you are a student with a disability and you think that you need accommodations, contact the [Office of Disability Services](#) at 703-993-1234 or ods@gmu.edu immediately if you have not already done so.

accommodations must be arranged through that office. You must submit accommodation recommendations to your instructor(s) immediately.

LEARNING OBJECTIVES

Critical Thinking: Develop your ability to comprehend and analyze concepts, and to critically evaluate scientific ideas.

Topical Comprehension: Give you a basic understanding of: Earth, the history of life on Earth, and how geological processes and biological processes over the history of the earth.

Scientific Communication: Develop your skills in communicating scientific ideas in a clear and concise manner that demonstrates comprehension of scientific topics.

GRADING

Graded items will be presented in the Recitation section over the semester. These graded items will consist of: quizzes, written assignments, discussions, and the class project (Virtual Museum). Two regular exams given during the lecture period plus a final exam during the school exam period. The final exam is cumulative. Your grade will be calculated as follows: Participation: 10%, Virtual Museum: 15%, Quizzes + Assignments + Exam 1 + Exam 2: 35%, Final Exam: 20%.

Quizzes and assignments will be graded on a scale from 1-10. If you miss your quizzes + assignments will be dropped from the grade calculation. If you miss a quiz or fail to hand in an assignment, you will receive a zero for that quiz or assignment. Assignments turned in late will be graded 10% of the value of the assignment. Assignments turned in more than 1 week late will receive a zero. Do not expect that a make-up exam will be given if you miss an exam. If classes (or just this class) are cancelled on the day of an exam, the exam will be given on the next scheduled class day that we are in session.

General grade scale: A: 90-100 pts; B: 80-89 pts; C: 70-79 pts; D: 60-69 pts; F: 50-59 points.

Assignments must be turned in electronically via Blackboard. All assignments must be submitted in either: plain text (.txt), Word (.doc or .docx) or PDF (.pdf) formats. **File names for each assignment should follow the format: Assignment X Lastname.doc. Where X is the assignment number and Lastname is your last name.** Failure to use this format may result in not receiving a grade in a timely fashion.

LESSONS

Introduction & Origin of the Earth

Reading: *Origin and Evolution of Earth*, Question 1, pp. 7-18

Note Taking Group 1

Fossil of the Day: *Mammuthus*

<https://en.wikipedia.org/wiki/Mammoth>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=43266

<http://www.earthtimes.org/scitech/yuka-ice-age-elephant-mammuthus-primigenius/191>

January 25, 2021

09:30 AM - 10:20 AM

Geologic Time

Reading: [Understanding Geologic Time](#)

Note Taking Group 3

Fossil of the Day: *Triceratops*

https://paleobiodb.org/classic/basicTaxonInfo?taxon_no=38862

<https://en.wikipedia.org/wiki/Triceratops>

https://www.si.edu/object/triceratops-horridus-marsh-1889:nmnhpaleobiology_33

January 27, 2021

09:30 AM - 10:20 AM

Origins and deep time

Reading: *Origin and Evolution of Earth*, Question 2, pp. 18-27

Note Taking Group 2

Fossil of the Day: *Pikaia*

<https://en.wikipedia.org/wiki/Pikaia>

https://paleobiodb.org/classic/basicTaxonInfo?taxon_no=34105

<https://burgess-shale.rom.on.ca/en/fossil-gallery/view-species.php?id=101&ref=i&>

January 29, 2021

09:30 AM - 10:20 AM

Sediments & Sedimentary Rocks

Reading: [Sedimentary Rocks](#)

Note Taking Group 1

Extra Videos:

[Rock Cycle](#)

[Sedimentary Rocks](#)

[Earth's inner structure](#)

[Plate Tectonics](#)

Fossil of the Day: *Daimonelix* (trace fossil from *Palaeocaster*)

<https://en.wikipedia.org/wiki/Palaeocaster>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=209187

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=41553

https://www.youtube.com/watch?v=tdfFoSC8_7k

February 1, 2021

09:30 AM - 10:20 AM

Origin of Life & Precambrian Life

Reading: *Origin and Evolution of Earth*, Question 3, pp. 27-34

Note Taking Group 3

Fossil of the Day: *Titanoboa*

<https://en.wikipedia.org/wiki/Titanoboa>

https://paleobiodb.org/classic/basicTaxonInfo?taxon_no=179038

<https://www.smithsonianmag.com/science-nature/how-titanoboa-the-40-foot-long-115791429/>

February 3, 2021

09:30 AM - 10:20 AM

Geological and Biological processes

Reading: *Origin and Evolution of Earth*, Question 8, pp. 84-94

Note Taking Group 2

Fossil of the Day: *Dunkleosteus*

<https://en.wikipedia.org/wiki/Dunkleosteus>

https://paleobiodb.org/classic/basicTaxonInfo?taxon_no=34328

<https://www.cmnh.org/dunk>

February 5, 2021

09:30 AM - 10:20 AM

Early Paleozoic earth history

Reading: [Paleozoic](#) ([Cambrian](#), [Ordovician](#), [Silurian](#), [Devonian](#))

Note Taking Group 1

Fossil of the Day: *Uintatherium*

<https://en.wikipedia.org/wiki/Uintatherium>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=40606

February 8, 2021

09:30 AM - 10:20 AM

Late Paleozoic Earth History

Reading: [Paleozoic](#) ([Carboniferous](#), [Permian](#))

Note Taking Group 3

Fossil of the Day: *Tiktaalik*

<https://en.wikipedia.org/wiki/Tiktaalik>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=77132

<https://www.youtube.com/watch?v=yvDQCa7rlel>

February 10, 2021

09:30 AM - 10:20 AM

Evolution

Reading: http://evolution.berkeley.edu/evolibrary/article/0_0_0/evo_02

Note Taking Group 2Fossil of the Day: *Mesosaurus*<https://en.wikipedia.org/wiki/Mesosaurus>https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=36324**February 12, 2021****09:30 AM - 10:20 AM****Colonial Life**

Reading: Cowen, Chapters 4 & 5

Note Taking Group 2Fossil of the Day: *Hydrodamalis gigas*https://en.wikipedia.org/wiki/Steller%27s_sea_cowhttps://paleobiodb.org/classic/basicTaxonInfo?taxon_no=53136https://animaldiversity.org/accounts/Hydrodamalis_gigas/**February 15, 2021****09:30 AM - 10:20 AM****Exam 1 Review**

Reading: Review Exam 1 readings and notes

Note Taking Group: 3**February 17, 2021****09:30 AM - 10:20 AM****Exam 1**

Reading: Review Exam 1 readings and notes

February 19, 2021**09:30 AM - 10:20 AM****Mesozoic earth history**Reading: [Mesozoic](#) ([Triassic](#), [Jurassic](#), [Cretaceous](#))**Note Taking Group 1**Fossil of the Day: *Carcharocles megalodon*<https://en.wikipedia.org/wiki/Megalodon>https://paleobiodb.org/classic/basicTaxonInfo?taxon_no=202672<https://extinctmonsters.net/2013/09/09/the-calvert-marine-museums-big-foam-sh>**February 22, 2021****09:30 AM - 10:20 AM****Brachiopoda**

Reading: Cowen, Chapter 5

Note Taking Group 2Fossil of the Day: *Morganucodon*<https://en.wikipedia.org/wiki/Morganucodon>https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=39753https://evolution.berkeley.edu/evolibrary/news/190502_mammals_chewing**February 24, 2021****09:30 AM - 10:20 AM**

Marine to Terrestrial transitions (and vice versa)

Reading: Read [The Origin of Tetrapods](#) and [The Evolution of Whales](#) on the Under website; Cowen Chapter 8

Note Taking Group 1

Fossil of the Day: *Odontochelys*

<https://en.wikipedia.org/wiki/Odontochelys>

https://paleobiodb.org/classic/basicTaxonInfo?taxon_no=137151

<https://www.sciencemag.org/news/2008/11/sea-change-turtle-origins>

February 26, 2021

09:30 AM - 10:20 AM

Fossils and Fossilization

Reading: <http://www.ucmp.berkeley.edu/paleo/fossilsarchive/>

Note Taking Group 3

Fossil of the Day: *Machimosaurus*

<https://en.wikipedia.org/wiki/Machimosaurus>

https://paleobiodb.org/classic/basicTaxonInfo?taxon_no=38341

<https://www.nationalgeographic.com/news/2016/01/160111-ancient-crocodile-machimosaurus-paleontology/>

March 1, 2021

09:30 AM - 10:20 AM

Mesozoic Life

Reading:

Note Taking Group 1

Fossil of the Day: *Brontosaurus*

<https://en.wikipedia.org/wiki/Brontosaurus>

https://paleobiodb.org/classic/basicTaxonInfo?taxon_no=52983

<https://www.scientificamerican.com/article/the-brontosaurus-is-back1/>

March 3, 2021

09:30 AM - 10:20 AM

Recovery from mass extinctions

Reading: [How to survive a mass extinction](#)

Note Taking Group 3

Fossil of the Day: *Diplocaulus*

<https://en.wikipedia.org/wiki/Diplocaulus>

https://paleobiodb.org/classic/basicTaxonInfo?taxon_no=37264

March 5, 2021

09:30 AM - 10:20 AM

Molluscs

Reading: Cowne, Chapter 5; <http://www.ucmp.berkeley.edu/taxa/inverts/mollusca>

Note Taking Group 2

Fossil of the Day: *Campanile giganteum*. Links here:

https://en.wikipedia.org/wiki/Campanile_giganteum

<http://www.thefossilforum.com/index.php?topic/83264-discovery-and-preparatio-giganteum-from-lutetian-of-fleury-la-rivi%C3%A8re-france/>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=107040

March 8, 2021

09:30 AM - 10:20 AM

Echinoderms

Reading: Cowen, Chapter 5; <http://www.ucmp.berkeley.edu/echinodermata/echin>

Note Taking Group 1

Fossil of the Day: Edrioasteroidea: *Isorophus cincinnatiensis*

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=30777

<https://www.myfossil.org/featured-fossil-edrioasteroids-of-cincinnati/>

<http://www.ordovicianatlas.org/atlas/echinodermata/edrioasteroidea/isorophida/>

March 10, 2021

09:30 AM - 10:30 AM

Evolution and Society

Reading: *Science, Evolution, and Creationism*

Note Taking Group 3

Fossil of the Day: *Basilosaurus*

<https://en.wikipedia.org/wiki/Basilosaurus>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=36681

<https://statesymbolsusa.org/symbol/alabama/state-dinosaur-or-fossil/basilosaurus>

March 12, 2021

09:30 PM - 10:20 PM

Cenozoic earth history

Reading: [Cenozoic](#) (Paleogene, Neogene)

Note Taking Group 2

Fossil of the Day: *Coryphodon*

<https://en.wikipedia.org/wiki/Coryphodon>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=40574

<https://lemur.duke.edu/fossil-fridays-coryphodon/>

March 15, 2021

09:30 AM - 10:20 AM

Arthropods

Reading: Cowen, Chapter 5; <http://evolution.berkeley.edu/evolibrary/article/arthr>

Note Taking Group 1

Fossil of the Day: *Anomalocaris*

<https://en.wikipedia.org/wiki/Anomalocaris>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=7370

<https://www.youtube.com/watch?v=ice47loNmsc>

March 17, 2021

09:30 AM - 10:20 AM

Evolution of Earth's climate

Origin and Evolution of Earth, Question 7, pp. 71-86

Note Taking Group 3

Fossil of the Day: *Notharctus*

<https://en.wikipedia.org/wiki/Notharctus>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=40764

<https://www.thirteen.org/programs/your-inner-fish/your-inner-fish-program-ancient-primates/>

March 19, 2021

09:30 AM - 10:20 AM

Vertebrates (through early tetrapods)

Reading: Cowen, Chapter 9

Note Taking Group 2

Fossil of the Day: *Tiktaalik*

<https://en.wikipedia.org/wiki/Tiktaalik>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=77132

<https://www.youtube.com/watch?v=yvDQCa7rleI>

March 22, 2021

09:30 AM - 10:20 AM

Exam 2 Review

Reading: Review Exam 2 readings and notes

Note Taking Group 1

March 24, 2021

09:30 AM - 10:20 AM

Exam 2

Reading: Review Exam 2 readings and notes

March 26, 2021

09:30 AM - 10:20 AM

Vertebrates (Amniota)

Reading: Cowen, Chapter 9

Note Taking Group 2

Fossil of the Day: *Brachyrhinodon*

<https://en.wikipedia.org/wiki/Brachyrhinodon>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=37813

March 29, 2021

09:30 AM - 10:20 AM

Dinosauria

Reading: Cowen, Chapter 12 & 16

Note Taking Group 3

Fossil of the Day: *Allosaurus*

<https://en.wikipedia.org/wiki/Allosaurus>
https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=38590
<https://www.youtube.com/watch?v=YSGdowqESaQ>

March 31, 2021

09:30 AM - 10:20 AM

Plate Tectonics & Evolution

Reading: Prothero, Chapter 9; [Biogeography: Wallace and Wegener](#)

Note Taking Group 1

Fossil of the Day: *Mesosaurus*

<https://en.wikipedia.org/wiki/Mesosaurus>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=36324

April 2, 2021

09:30 AM - 10:20 AM

Mammalia

Reading: Cowen, Chapter 15 & 17

Note Taking Group 2

Fossil of the Day: *Morganucodon*

<https://en.wikipedia.org/wiki/Morganucodon>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=39753

https://evolution.berkeley.edu/evolibrary/news/190502_mammals_chewing

April 5, 2021

09:30 AM - 10:20 AM

Mammalia (continued)

Reading:

Note Taking Group 3

Fossil of the Day: *Uintatherium*

<https://en.wikipedia.org/wiki/Uintatherium>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=40606

April 7, 2021

09:30 AM - 10:20 AM

Nature and quirks of the fossil record

Reading: Tahnukos 2009

Note Taking Group 1

Fossil of the Day: *Squalodon*

<https://en.wikipedia.org/wiki/Squalodon>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=36852

April 9, 2021

09:30 AM - 10:20 AM

Mammalia (continued)

Reading: Uhen 2007

Note Taking Group 2

Fossil of the Day: *Icaronycteris*

<https://en.wikipedia.org/wiki/Icaronycteris>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=40632

April 12, 2021

09:30 AM - 10:20 AM

Cenozoic Marine Radiations

Reading: Uhen 2007

Note Taking Group 3

Fossil of the Day: *Enaliarctos*

<https://en.wikipedia.org/wiki/Enaliarctos>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=36916

April 14, 2021

09:30 AM - 10:20 AM

Taphonomy

Reading: Behrensmeyer 1984

Note Taking group 1

Fossil of the Day: *Daimonelix* (trace fossil from *Palaeocaster*)

<https://en.wikipedia.org/wiki/Palaeocaster>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=209187

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=41553

https://www.youtube.com/watch?v=tdfFoSC8_7k

April 16, 2021

09:30 AM - 10:20 AM

Paleobotany

Reading: <http://www.ucmp.berkeley.edu/IB181/VPL/Dir.html>

To be clear, don't do the labs at the link, just read the background information about evolution.

Note Taking Group 2

Fossil of the Day: *Archaeopteris*

<https://en.wikipedia.org/wiki/Archaeopteris>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=249678

April 19, 2021

09:30 AM - 10:20 AM

Human Evolution

Note Taking Group 1

Fossil of the Day: *Homo*

https://en.wikipedia.org/wiki/List_of_human_evolution_fossils

April 21, 2021

09:30 AM - 10:20 AM

Human Evolution

Reading: [Human Evolution Evidence](#); Cowen, Chapters 19 & 20

Note Taking Group 2

Fossil of the Day: *Homo floresiensis*

https://en.wikipedia.org/wiki/List_of_human_evolution_fossils

<https://humanorigins.si.edu/evidence/human-fossils/species/homo-floresiensis>

April 23, 2021

09:30 AM - 10:20 AM

Pleistocene and Human Impacts

Reading: [Pleistocene](#), Barnosky et al. 2011, *Origin and Evolution of Earth*, Question 7, Chapter 21

Note Taking Group 3

Fossil of the Day: *Mammuthus*

<https://en.wikipedia.org/wiki/Mammoth>

https://www.paleobiodb.org/classic/basicTaxonInfo?taxon_no=43266

<http://www.earthtimes.org/scitech/yuka-ice-age-elephant-mammuthus-primigenius/191>

April 26, 2021

09:30 AM - 10:20 AM

TBA

April 28, 2021

09:00 AM - 10:20 AM

Final Exam Review

Reading: Review all readings and notes

Note Taking Group 3

April 30, 2021

09:30 AM - 10:20 AM

Final Exam

Reading: Review all previous exams, readings, and notes.

May 3, 2021

07:30 AM - 10:15 AM