

Course title and number GEOL 208 Life on a Dynamic Planet
Term Fall XXXX
Meeting times and location Lecture: M W TBD
 Lab: TBD

Course Description and Prerequisites

Description: Critical events in the Earth's 4.6 billion-year history that shaped life as we know it, and the tools to investigate them; interactions between global environments, the evolution of life and the geologically recent development of human societies.

Credits: 2-1; Prerequisites: None

Learning Outcomes

Upon successful completion of this course students will be able to:

- Pose scientific hypotheses about the earth system
- Critically evaluate scientific evidence to support and refute hypotheses
- Use information from the sedimentary record to investigate Earth's History
- Explain the interactions between life and the Earth system through time
- Use past events to understand the modern world and forecast future changes

Instructor

Name Dr. Christina Belanger
Telephone number 458-4372
Email address Christina.Belanger@tamu.edu
Office hours TBD
Office location Halbouty 265

Resource Material

Weekly readings from peer reviewed journals and popular science literature. No textbook.

Grading Policies

The final course grade will be based upon:

Thought Experiments	12%
Laboratory Assignments	28%
Take Home Midterm #1	15%
Take Home Midterm #2	15%
Final Exam	30%

Students are expected to attend all classes with exceptions provided by the University's policy for excused absences. For more information, visit <http://student-rules.tamu.edu>.

Grading Scale

Standard Letter Grading Scale: A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, F = <60

Course Calendar

Topic	Required Reading & Activity / Lab Topics
Week 1: Historical Hypotheses	Monday: Introduction; Geologic Time Wednesday: Cleland, 2001 Lab 1: Clocks in Rocks
Week 2: Life Against All Odds	Monday: Arndt and Nisbet, 2012 Wednesday: Thought Experiment #1 Lab 2: Testing Historical Hypotheses
Week 3: Snowball Earth	Monday: Hoffman and Schrag, 2000 (SA) Wednesday: Thought Experiment #2 Lab 3: Climate Controls
Week 4: Explosion of Diversity	Monday: Marshall, 2006 Wednesday: Thought Experiment #3 Lab 4: Ways of Being an Animal
Week 5: Take Home Exam 1 Due on eCampus Friday 5 pm	Monday: Complete Part 1 Exam, Collaborative Wednesday: Complete Part 2 Exam, Collaborative Lab 5: The Three Evolutionary Faunas
Week 6: The Rise and Fall of Seas	Monday: Sheehan, 2001 Wednesday: Thought Experiment #4 Lab 6: Sedimentary Rocks
Week 7: Riding the Continents	Monday: Zaffos et al., 2017; Dalziel 2005 (SA) Wednesday: Thought Experiment #5 Lab 7: Plate Tectonics
Week 8: CO ₂ , Heat, and Acid	Monday: Benton and Twitchet, 2003 Wednesday: Thought Experiment #6 Lab 8: Analyzing Extinctions
Week 9: Extraterrestrial Impacts	Monday: Schulte et al., 2010; Betz 2017 (DM) Wednesday: Thought Experiment #7 Lab 9: Stratigraphic Records
Week 10: Opportunity from Extinction	Monday: Brusatte and Lou, 2016 (SA); Brusatte 2016 Wednesday: Thought Experiment #9 Lab 10: Analyzing Radiations
Week 11: Take Home Exam 2 Due on eCampus Friday 5 pm	Monday: Complete Part 1 Exam, Collaborative Wednesday: Complete Part 2 Exam, Collaborative Lab 11: Environmental Reconstruction
Week 12: Megafaunal Engineers	Monday: Bakker et al., 2016; Switek 2017 (SA) Wednesday: Thought Experiment #10 Lab 12: Pollen Records of Change
Week 13: Holocene Stability (or Not)	Monday: Mayewski et al., 2004; Douglas et al., 2016 Wednesday: Thought Experiment #11 Lab 13: Holocene Climate Records
Week 14: The Anthropocene and Beyond	Monday: Kidwell, 2015, Barnosky et al., 2017 Wednesday: Thought Experiment #12 Lab 14: Conservation Paleobiology

Assignments

Thought Experiments are short prompts requiring an approximately 1 paragraph response to be turned in via eCampus **before the start of classes on Wednesdays**. Students are expected to discuss their thoughts with classmates at the start of class before a whole group discussion on the topic. Typically, these will ask students to evaluate how an event affected life or how the evolution of new organisms affected earth environments. Students may miss no more than ONE Thought Experiment assignment without penalty, except as allowed in accordance with <http://student-rules.tamu.edu/rule07>.

Lab Assignments are guided learning projects that will begin during the lab period but often can be completed outside of the lab period if needed. Labs assigned in one week are due at the beginning of the next week's lab period.

Late Policy and Attendance

Attendance is mandatory with allowances for excused absences with proper documentation in accordance with <http://student-rules.tamu.edu/rule07>. Reading Assignments, Thought Experiments, and Laboratory Assignments will not be accepted late, except as in accordance with rule 07.

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit <http://disability.tamu.edu>.

Academic Integrity

For additional information please visit: <http://aggiehonor.tamu.edu>

"An Aggie does not lie, cheat, or steal, or tolerate those who do."