CCC 18014

Core Curriculum Management

New Core Component Proposal

Date Submitted: 10/06/17 4:11 pm

Viewing: GEOL 207-GE : GEOL207

Last edit: 10/06/17 4:34 pm

Changes proposed by: david-w-sparks

Contact(s)

Name	E-mail	Phone
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Course Prefix	GEOL	Course Number	207
Academic Level	UG		
Complete Course Title	GEOL207		
Abbreviated Course Title	GEOL207		
Crosslisted With			
Semester Credit Hour(s)	4		
Proposal for:	Core Curriculum Addition/Edit		
How frequently will the class be offered?	once in 2018-19, but twice per year after that		
Number of class sections per semester	1		
Number of students per semester	60		

Historic annual enrollment for the last three years

Last year:	Previous year:	Year before:

In Workflow

1. GEPL Department Head
2. GE College Dean UG
3. CCC Preparer
4. CCC Chair
5. Faculty Senate Preparer
6. Faculty Senate
7. Provost II
8. President
9. Curricular Services

Approval Path

1. 10/06/17 4:36 pm Michael Pope (mcpope): Approved for GEPL Department Head
2. 10/19/17 2:45 pm Christian Brannstrom (cbrannst): Approved for GE College Dean UG

Core curriculum

Foundational Component Area	Core Life/Physical Sci (KLPS)
TCCN prefix/number	

Foundational Component Area: Life/Physical Sci

How does the proposed course specifically address the Foundational Component Area definition above?

GEOLOGY 107 focuses on the evolutionary history of dinosaurs in the context of Mesozoic environments, climate and events (the Permian/Triassic and Cretaceous/Paleogene Mass Extinctions). This course covers dinosaurs through the application of the scientific method. Lectures focus on plate tectonics, Mesozoic paleogeography and paleoclimate, how vertebrate fossils form, the evolution of dinosaurs, the paleoecology of major dinosaur groups, and the evolution of birds. Laboratory exercises focus on interpretation of depositional environments and learning the bones of the vertebrate skeleton. Students will work in groups to identify a dinosaur and its stratigraphic age, reconstruct its skeleton, and determine its ecology, habitat and the depositional setting of the sediments that surround it.

Core Objectives:

Critical Thinking (to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information):

In lab, students will make and record observations of dinosaur bones, and use these observations to identify the bones, and eventually, to identify the dinosaur species and reconstruct the organism. Building on their observations, students will read scientific literature and determine the dinosaur's stratigraphic age, its probable ecologic niche, and describe the environment and climate zone in which it lived.

Communication (to include effective development, interpretation and expression of ideas through written, oral and visual communication):

Working in small teams of three to four students, students will research and prepare oral reports: the first on part of the dinosaur skeleton including the identity of the bones, a reconstruction of that part of the skeleton, and an analysis of its functional morphology; the second on some aspect of the site or the skeleton. Connected with the second report, each team will prepare a written report of their findings. While the first report will be based primarily on observation of the skeleton, the second will require students to read the scientific literature.

Empirical and Quantitative Skills (to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions):

Students will work with real data sets (provided by the instructor or available from web-based sources) to reconstruct dinosaur speed from trackways. Students will make scaled drawings of bones and of the excavation site. Most laboratory sessions will involve direct observations of bones and their taphonomic condition and students will use the observations to identify the bones, and eventually the dinosaur..

Teamwork (to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal):

In lab, students will work in teams to reconstruct the major parts of the dinosaur skeleton: neck and back vetebrae, forelimb, hindlimb, tail, with all teams participating in analysis of the skull. Teams will work collaborative to prepare a site map and report their findings to the class. Each team will focus on a different aspect of the excavation site (e.g. stratigraphic age and depositional environment, identity and phylogeny of the dinosaur, ecological niche, dinosaur habitat and paleoclimate). At the end of the semester, groups will present their results to the class and prepare a written report of their findings.

Please ensure that the attached course syllabus sufficiently and specifically details the appropriate core objectives.

Attach Course Syllabus	Geol_207_DinosaurWorld.pdf
Reviewer Comments	**Michael Pope (mcpope) (10/06/17 4:34 pm):** This is really a 3 credit course; the course change form has been submitted to fix that. The approval date is there just to get the proposal to submit; this date should be changed when course is approved.

Key: 435

Geology 207. Dinosaur World

Course Description and Prerequisites
Survey of dinosaur paleobiology and paleoecology; terrestrial paleoclimate and paleoenvironments of the Mesozoic; dinosaur ancestors; appearance and radiation of dinosaurs; paleoecology and paleobiology of major dinosaur groups; extinction of large dinosaurs and the Cretaceous/Paleogene mass extinction; the appearance and ancestry of birds. Not open to students who have taken GEOL 307.

Prerequisites: none

Course Objectives and Learning Outcomes
The objective of Geology 207. Dinosaur World is to explore dinosaur paleobiology, paleoecology, and evolution in the context of Mesozoic environments and climate.

Learning outcomes:
1. Describe how the scientific method has led to our current understanding of the dinosaur ecology and evolution.
2. Interpret the origin and distribution of vertebrate fossils including dinosaurs.
3. Communicate the theory of natural selection to non-scientists.
4. Describe Mesozoic climate and plate configurations and evaluate how these may have shaped dinosaur evolution.
5. Create and interpret phylogenetic trees depicting evolutionary relationships among dinosaurs and living archosaurs (birds and crocodilians).
6. Describe the geologic evidence for the cause of the Cretaceous/Paleogene mass extinction and evaluate the effect of this mass extinction on the terrestrial biota.

Instructor: Anne Raymond (raymond@geo.tamu.edu, 845-0644)
Halbouty 161

Office hours: 1 hour/week, to be announced

Resources:
Required text: *Dinosaurs: The textbook, 6th Edition*, by Spencer Lucas.
The syllabus, course announcements, and some other materials will be posted during the semester on the course eCampus web site.

Lecture: 1 hour week, meeting time and location to be announced

Week	Topic:	Reading
1	The Mesozoic World	Lucas, Ch. 10
2	Most vertebrates never become fossils	Lucas, Ch. 3, 11
3	Dinosaur Ancestors and natural selection Quiz 1	Lucas, Ch. 4
4	Prosauropods and Sauropods	Lucas, Ch. 6
5	Dinosaur Metabolism: warm, cold or in between?	Lucas, Ch. 13

6	Ornithopods Quiz 2	Lucas, Ch. 7
7	Dinosaurs as parents	Lucas, Ch. 7
8	Stegosaurs and Ankylosaurs	Lucas, Ch. 8
9	Ceratopsians	Lucas, Ch. 9
10	Pachycephalosaurs Quiz 3	Lucas, Ch.9
11	Predatory Dinosaurs	Lucas, Ch. 5
12	Predatory Dinosaurs Quiz 4	Lucas, Ch. 5
13	The Extinction of Large Dinosaurs	Lucas, Ch. 15
14	Birds are Dinosaurs	Lucas, Ch. 14
15	Final Exam	

Examination and Grading:
The course grade will be based on four quizzes (40%), the final exam (50%), quizzes (5%), and the laboratory (25%). Each of the four quizzes will carry equal weight. They will be closed book and will cover material presented in the text, lectures and the eCampus site. The final exam will be cumulative.

Make-up quizzes will be given if you have a university approved, documented excuse for missing the originally scheduled exam. The documentation for the absence can be either the Texas A&M University Explanatory Statement or a confirmation of a visit to a health care professional affirming date and time of the visit. It is your responsibility to contact me before the exam or as soon as possible after a quiz to arrange a make up. Make-up quizzes will be given normally one week after the scheduled quiz, immediately after class.

The grade scale is: 90-100=A, 80-89=B, 70-79=C, 60-69=D, 0-59=F.

Americans with Disabilities Act (ADA) Policy Statement
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..

Plagiarism and the Honor Code
As commonly defined, plagiarism consists of passing off the ideas, words, writings, web site material, music, or video created by someone else as your own. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have permission of that person. Plagiarism is one of the worst academic sins, because it destroys the trust among colleagues.

If you are unsure about how to properly cite or reference your work, please ask the Teaching Assistant or your lecture professor for help. There are also numerous books and references in the library on proper citation and formatting. If you have any further questions concerning plagiarism, please consult the Aggie Honor Code, http://aggiehonor.tamu.edu/Rules-and-Procedures/Rules/Honor-System-Rules

Attendance Policy

The University views class attendance as the responsibility of an individual student. Attendance, especially in courses with collaborative projects done in groups, is essential to complete the course successfully. University rules related to excused and unexcused absences are located on-line at http://student-rules.tamu.edu/rule07."