



Course Information

Course Title	Historical Geology
Course Prefix, Num. and Title	GEOL 1304
Division	Life Sciences
Department	Geology
Course Type	Academic WCJC Core Course
Course Catalog Description	A comprehensive survey of the history of life and major events in the physical development of Earth as interpreted from rocks and fossils. Introduction to the history of the earth and its past inhabitants. Provides a broad overview of fossil records as evidence of the various kinds of plants and animals that have existed on earth. GEOL 1104 must be taken with this course to fulfill the 4 semester credit hour requirement for natural science in a degree plan.
Pre-Requisites	TSI satisfied in Reading and Writing; Credit for or concurrent enrollment in GEOL 1303 Physical Geology.
Co-Requisites	Recommended co-requisite: GEOL 1104 Physical Geology (lab)

Semester Credit Hours

Total Semester Credit Hours (SCH): Lecture Hours:	3:3:0
Lab/Other Hours	
Equated Pay Hours	3
Lab/Other Hours Breakdown: Lab Hours	
Lab/Other Hours Breakdown: Clinical Hours	
Lab/Other Hours Breakdown: Practicum Hours	
Other Hours Breakdown	

Approval Signatures

Title	Signature	Date
Prepared by:	<i>Peter Anderson</i>	
Department Head:	<i>Peter Anderson</i>	
Division Chair:		
Dean/VPI:		
Approved by CIR:		

Additional Course Information

Topical Outline: Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, and clinical or other non-lecture instruction).

1. Introduction to Earth System History
2. Earth Materials and Features
3. Geologic Time
4. Life on Earth and its Fossil Record
5. Biologic Evolution
6. Interpreting Sedimentary Environments and Global Change
7. Plate Tectonics and Earth History
8. Archean World - Geology and Life Forms, especially the development of Life
9. Proterozoic World - Geology and Life Forms, with emphasis on the expansion of types of soft-bodied life forms
10. Paleozoic World - Geology and Life Forms with emphasis on the development of Terrestrial Plants and Terrestrial Vertebrate Organisms
11. Mesozoic World - Geology and Life Forms - The Rise of Dinosaurs and development of Mammals
12. Cenozoic World - Geology and Life Forms with emphasis on the Rise of Primates and the Evolution of Humans

Course Learning Outcomes:

Learning Outcomes – Upon successful completion of this course, students will:

1. Describe how the application of the scientific method has led to our current understanding of Earth history.
2. Explain the historical development of Geology as a science and how it was influenced by early interpretations of fossils and the theory of evolution.
3. Communicate how principles of relative and numerical age dating have been used to develop the Geologic Time Scale.
4. Describe the processes involved in the formation and differentiation of the Earth and identify major milestones in the physical evolution of the planet.
5. Identify the major milestones in the evolution of life from its initial inorganic stages, through development of the major animal and plant groups, to mass extinctions.
6. Explain how rocks and fossils are used to interpret ancient environments.
7. Identify the major tectonic events in the geologic evolution of North America.

Methods of Assessment:

1. Quizzes, Labs, Exams
2. Quizzes, Labs, Exams, Group Projects
3. Quizzes, Labs, Exams
4. Quizzes, Labs, Exams, Essays
5. Quizzes, Labs, Exams, Essays
6. Quizzes, Labs, Exams, Essays
7. Quizzes, Labs, Exams

Required text(s), optional text(s) and/or materials to be supplied by the student:

Geol 1304	Historical Geology	The Evolving Earth	Donald R. Prothero	9780190605629	Oxford University Press
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Suggested Course Maximum: 36

List any specific or physical requirements beyond a typical classroom required to teach the course.

Lecture Classroom and designated geology lab room with storage/housing of specimens of minerals, rocks, fossils and other geology-related teaching materials (i.e. computer, projector, internet access, etc.).

Course Requirements/Grading System:

- A. 3 – 4 major Lecture Exams (Not including the Final/EXIT) = 40 - 50%
- B. 1 - Essay/Term Paper = 10%
- C. Group Power Point Project/Project Average = 10%
- 1 required project, more can be assigned
- D. Quizzes – optional, at discretion of the instructor = 0 – 10%
- E. The Course Final/EXIT accounts = 20%

The Student's Overall Course Grade is compiled by:
Adding the total percentage points from each section together.

- 90 – 100 = A
- 80 - 89 = B
- 70 - 79 = C
- 60 - 69 = D
- Below 60 = F

Curriculum Checklist:

- Administrative General Education Course** (from ACGM, but not in WCJC Core) – No additional documents needed.
- Administrative WCJC Core Course.** Attach the Core Curriculum Review Forms
 - Critical Thinking
 - Communication
 - Empirical & Quantitative Skills
 - Teamwork
 - Social Responsibility
 - Personal Responsibility
- WECM Course** -If needed, revise the Program SCANS Matrix and Competencies Checklist



Foundational Component Area: Core 030: Life & Physical Science

Course Prefix & Suffix: GEOL 1304

Core Objective:

Critical Thinking Skills—to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information

Student Learning Outcome Supporting Core Objective:

For each core objective, there must be at least two different methods of assessment.

SLO Status	Student Learning Outcome (SLO)	Learning Activity	Assessment
State Mandated	Explain the development of geology as a science and how it was influenced by early interpretations of fossils and the theory of evolution.	Lecture, class discussion, labs, research geologic databases, videos, write essay/term paper	Lab exercises/reports, quizzes, essay/term paper, End of Course Final/Exit
State Mandated	Identify the major milestones in the evolution of life from its initial inorganic stages, through the development of the major animal and plant groups, to mass extinctions.	Lecture, class discussion, Labs	Lab exercises/reports, quizzes, essay/term paper ,Open-Ended Exam Question, Final/Exit
State Mandated	Describe the processes involved in the formation and differentiation of the earth and identify major milestones in the physical evolution of the planet.	Lecture, class discussion, labs, research geologic databases, videos, write essay/term paper	Lab exercises/reports, quizzes, essay/term paper, End of Course Final/Exit

Core Curriculum Review Form

Foundational Component Area: Core 030: Life & Physical Science

Course Prefix & Suffix: GEOL 1304

Core Objective:

Communication Skills—to include effective development, interpretation and expression of ideas through written, oral and visual communication

Student Learning Outcome Supporting Core Objective:

For each core objective, there must be at least two different methods of assessment.

SLO Status	Student Learning Outcome (SLO)	Learning Activity	Assessment
State Mandated	Explain the impact of collaboration and teamwork in scientific endeavors	Lecture, class discussion, Current Event Findings,	lab practicals, quizzes, essay, lab group presentations
State Mandated	Identify, describe and label the representative, phylogenetic fossil groups presented during lab	Lecture, Class Discussion, Labs (I.E. Fossil Identification Labs, etc...)	Practicals, quizzes, Team presentations on specific assigned ancient life form



Core Curriculum Review Form

Foundational Component Area: Core 030: Life & Physical Science

Course Prefix & Suffix: GEOL 1304

Core Objective:

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

Student Learning Outcome Supporting Core Objective:

For each core objective, there must be at least two different methods of assessment.

SLO Status	Student Learning Outcome (SLO)	Learning Activity	Assessment
State Mandated	Learn and apply the fundamental principles of geology such as uniformitarianism, superposition, cross-cutting relationships, and faunal succession to problems in Historical Geology.	Lecture, class discussions, Geochronology dating problems, Labs (I.E. Relative and Radiometric Techniques, etc...)	Quizzes, Exams, Final, Lab exercises/reports



Core Curriculum Review Form

Foundational Component Area: Core 030: Life & Physical Science

Course Prefix & Suffix: GEOL 1304

Core Objective:

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

Student Learning Outcome Supporting Core Objective:

For each core objective, there must be at least two different methods of assessment.

SLO Status	Student Learning Outcome (SLO)	Learning Activity	Assessment
State Mandated	Understand how geologists study earth processes in order to understand and reconstruct the past, present, and future.	Lecture, Class Discussions, Videos, Labs (I.E. Corals & Relatives Lab, Sponges Lab, etc...)	Lab Teamwork (Peer/Self) Rubric-twice a semester,
State Mandated	Explain the impact of collaboration and teamwork in scientific endeavors	Lecture, Class Discussions, Videos, Labs, Group Power Point Project	Teamwork (Peer/Self) Rubric on Group Power Point Project, Quizzes, Exam, Final