Wharton County Junior College

Administrative Master Syllabus

Course Information

Course Title	Historical Geology Laboratory
Course Prefix, Num. and Title	GEOL 1104
Division	Life Sciences
Department	Geology
Course Type	Academic WCJC Core Course
Course Catalog Description	This laboratory-based course accompanies GEOL 1304, Historical Geography. Laboratory activities will introduce methods used by scientists to interpret the history of life and major events in the physical development of Earth from rocks and fossils.
Pre-Requisites	Credit for or concurrent enrollment in GEOL1304
Co-Requisites	Enter Co-Requisites Here.

Semester Credit Hours

Total Semester Credit Hours (SCH): Lecture Hours: Lab/Other Hours	1:0:2
Equated Pay Hours	1.2
Lab/Other Hours Breakdown: Lab Hours	2
Lab/Other Hours Breakdown: Clinical Hours	Enter Clinical Hours Here.
Lab/Other Hours Breakdown: Practicum Hours	Enter Practicum Hours Here.
Other Hours Breakdown	List Total Lab/Other Hours Here.

Approval Signatures

Title	Signature	Date
Prepared by:	Peter Anderson	4/25/25
Department Head:	Peter Anderson	4/25/25
Division Chair:	Kevin Dees Digitally signed by Kevin Dees Date: 2025.04.25 15:32:22 -05'00'	
Dean/VPI:	Leigh Ann Collins Digitally signed by Leigh Ann Collins Date: 2025.04.28 09:47:39 -05'00'	
Approved by CIR:	March 2025	

Additional Course Information

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

1. The Sedimentary Environment
2. Geochronology Part I: Relative Dating of Strata
3. Geochronology Part II: Absolute or Radiometric Dating of Strata
4. Fossils, Taxonomy, and the Species Concept
5. The Sponges: Early Multi-celled Animals
6. The Corals and their Relatives
7. The Bryozoans: “Lacy Animals”
8. The Brachiopods: Bivalved Lophophorates
9. The Bivalves: Clams, Oysters, and Relatives
10. The Gastropods: Snails, Slugs, and Relativesacticum, and clinical or other non-lecture instruction).
11. The Cephalopods: Chambered Nautilus, Ammonites, and Relatives
12. The Arthropods: Sea Scorpions, Trilobites, Insects, and Relatives
13. The Echinoderms: Spiny-skinned Animals
14. Microfossils: Tiny Members of the Fossil Record
15. Paleobotany: Plants and Plant-like Organisms

Course Learning Outcomes:

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

1. Classify and interpret depositional environments using sedimentary rocks and fossils.
2. Taxonomically classify samples of geologically important fossil groups and use them to interpret the age of rocks on the Geologic Time Scale.
3. Apply relative and numerical age-dating techniques to construct geologic histories including the correlation of stratigraphic sections.
4. Reconstruct past continental configurations.
5. Integrate multiple types of data to interpret Earth history.

Methods of Assessment:

1. Quizzes and Lab Practicals
2. Quizzes and Lab Practicals
3. Quizzes and Lab Practicals
4. Quizzes and Lab Practicals
5. Quizzes and Lab Practicals

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

Most current edition of: Interpreting Earth History: A Manual in Historical**, Geology Scott** Ritter and Morris Petersen**, Waveland** Press Inc. **current edition**

Suggested Course Maximum: 24

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

A lab room will be needed that has a computer with projector, high speed internet connection and the computer must have multimedia functions for DVDs, etc. This room or (nearby storeroom) must be stocked with sufficient specimens of minerals, rocks, fossils, and geologic/topographic maps and map interpretation equipment (i.e. compasses, compass roses, straight edges, protractors, etc.

Course Requirements/Grading System:

Examinations will follow a pre-set semester lab schedule

7 Scheduled Lab Quizzes with the average of the top 5 quizzes equaling	20%
Geological Concepts Practical	20%
Geological Concepts Practical	20%
Fossil Practical	20%
Lab Notebook completed by student during the course of the semester	20%
TOTAL	100%

Grade Scale (from which no instructor may deviate)

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

Wharton County Junior College **Core Curriculum Review Form**

Foundational Component Area: Core 030: Life & Physical Science

Course Prefix & Suffix: GEOL 1104

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	Lab exercises/reports, quizzes
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
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	Lab exercises/reports, quizzes

Core Curriculum Review Form

Foundational Component Area: Core 030: Life & Physical Science

Course Prefix & Suffix: GEOL 1104

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	Teamwork (Peer/Self), Quizzes, Exam	Lecture, class discussion, Current Event Findings,	lab practicals, quizzes, essay
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
Choose a SLO status.	Insert SLO (from Administrative Master Syllabi)	Provide a brief name and description of the sample learning activity.	Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective.

Wharton County Junior College

Core Curriculum Review Form

Foundational Component Area: Core 030: Life & Physical Science

Course Prefix & Suffix: GEOL 1104

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, Lab exercises/reports
Choose a SLO status.	Insert SLO (from Administrative Master Syllabi)	Provide a brief name and description of the sample learning activity.	Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective.
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Core Curriculum Review Form

Foundational Component Area: Core 030: Life & Physical Science

Course Prefix & Suffix: GEOL 1104

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)
State Mandated	Explain the impact of collaboration and teamwork in scientific endeavors	Lecture, Class Discussions, Videos, Labs	Teamwork (Peer/Self) Rubric, Quizzes, Exam~~,~~
Choose a SLO status.	Insert SLO (from Administrative Master Syllabi)	Provide a brief name and description of the sample learning activity.	Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective.