Wharton County Junior College

Administrative Master Syllabus

Course Information

Course Title	Physical Geology Laboratory
Course Prefix, Num. and Title	GEOL 1103
Division	Life Sciences
Department	Geology
Course Type	Academic WCJC Core Course
Course Catalog Description	This laboratory-based course accompanies GEOL 1303, Physical Geology. Laboratory activities will cover methods used to collect and analyze earth science data. Topics include mineral and rock identification, surface processes, structure, and interpretation of geologic and topographic maps. Introduction to the materials, processes, and structure of the earth.
Pre-Requisites	Credit for or concurrent enrollment in GEOL1303
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 15:29:58 -05'00'	
Dean/VPI:	Leigh Ann Collins Digitally signed by Leigh Ann Collins Date: 2025.04.28 09:47:05 -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. Introduction to Minerals
2. Properties of Minerals
3.The Rock Cycle & Igneous Rocks
4. Sedimentary Environments
5. Metamorphics
6. Plate Tectonics & Geologic Structure
7. Rivers & Streams
8. Groundwater & Karst Topography
9. Glaciers
10. Intro to Mapping

Course Learning Outcomes:

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

1. Classify rocks and minerals based on chemical composition, physical properties, and origin.
2. Apply knowledge of topographic maps to quantify geometrical aspects of topography.
3. Identify landforms on maps, diagrams, and/or photographs and explain the processes that created them.
4. Differentiate the types of plate boundaries and their associated features on maps and profiles and explain the processes that occur at each type of boundary.
5. Identify basic structural features on maps, block diagrams and cross sections and infer how they were created.
6. Demonstrate the collection, analysis, and reporting of data.

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
6. Quizzes and Lab Practicals

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

Most current Edition of*:*

Laboratory Manual for Introductory Geology
Allan Ludman and Stephen Marshak
W.W. Norton & company, Inc.
Used textbooks are acceptable

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%
Mineral Practical	20%
Rock Practical	20%
Concepts 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 1103

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	Identify and describe the processes of Mineral and Rock identification	Lecture, class discussion, labs, research geologic databases, videos	Lab exercises/reports, Lab Practicals, quizzes
State Mandated	Quantify the rates of physical and chemical processes acting on earth and how these processes fit into the context of geologic time.	Lecture, class discussion, Labs	Lab exercises/reports, quizzes,
State Mandated	Communicate how surface processes are driven by interactions among earth's systems (e.g. geosphere, hydrosphere, biosphere, and atmosphere)	Lecture, class discussion, labs, research geologic databases, videos	Lab exercises/reports, Lab Practicals, quizzes

Wharton County Junior College

Core Curriculum Review Form

Foundational Component Area: Core 030: Life & Physical Science

Course Prefix & Suffix: GEOL 1103

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
State Mandated	Describe the theory of plate tectonics and its relationship to the formation and distribution of earth's crustal features.	Lecture, Class Discussion, Labs (I.E. Mineral/Rock Identification Labs, etc...)	Lab reports, identification practicals of rocks and minerals
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 1103

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 mathematics-based geochronological problems as they apply to Physical Geology.	Lecture, class discussions, Geochronology dating problems, Labs (I.E. Relative and Radiometric Techniques, etc...)	Quizzes, Exams, Final, 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 1103

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 best utilize earth's resources and to best be made aware of and respond to the naturally-occurring geological hazards such as earthquakes, volcanoes, etc..	Lecture, Class Discussions, Videos, Labs (I.E. Geochemistry Lab, Mineralogy 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 on Group lab work
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.