Wharton County Junior College

Administrative Master Syllabus

Course Information

Course Title	Physical Geology
Course Prefix, Num. and Title	GEOL 1303
Division	Life Sciences
Department	Geology
Course Type	Academic WCJC Core Course
Course Catalog Description	Introduction to the study of the materials and processes that have modified and shaped the surface and interior of Earth over time. These processes are described by theories based on experimental data and geologic data gathered from field observations. Topics include continental drift, earthquakes, glaciations, mineral resources, mountain building, oceans, volcanoes, weathering, and erosion. GEOL 1103 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
Co-Requisites	Recommended co-requisite: GEOL 1103 Physical Geology (lab)

Semester Credit Hours

Total Semester Credit Hours (SCH): Lecture Hours: Lab/Other Hours	3:3:0
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:	Peter Anderson	8/24/22
Department Head:	Peter Anderson	8/24/22
Division Chair:	Kevin Dees Digitally signed by Kevin Dees Date: 2023.05.24 14:28:39 -05'00'	
Dean/VPI:	Leigh Ann Collins Digitally signed by Leigh Ann Collins Date: 2023.05.24 14:52:08 -05'00'	
Approved by CIR:	Donald S Smith Digitally signed by Donald S Smith Date: 2023.05.25 15:21:52 -05'00'	

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 Geology
2. Universe Beginnings
3. The Earth's Structure
4. Continents
5. Evolution of Land Forms
6. Crustal Deformation
7. Plate Tectonics
8. Ocean Basins
9. Geochemistry & Minerals
10. Igneous Rocks & Igneous Activity
11. Volcanism
12. Weathering & Erosion & Soils
13. Sedimentary Rocks
14. Metamorphic Processes
15. Geologic Time
16. Earthquakes
17. Geologic Structure
18. River Systems, Groundwater and Karst Topography
19. Glacial Systems
20. Deserts of the World
21. Coastline Processes
22. Economic Resources

Course Learning Outcomes:

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

1. Describe how the scientific method has led to our current understanding of Earth's structure and processes.
2. Interpret the origin and distribution of minerals, rocks and geologic resources.
3. Describe the theory of plate tectonics and its relationship to the formation and distribution of Earth's crustal features.
4. Quantify the rates of physical and chemical processes acting on Earth and how these processes fit into the context of geologic time.
5. Communicate how surface processes are driven by interactions among Earth's systems (e.g., the geosphere, hydrosphere, biosphere, and atmosphere).
6. Identify and describe the internal structure and dynamics of Earth.
7. Describe the interaction of humans with Earth including sustainable development of natural resources and the assessment and mitigation of hazards.

Methods of Assessment:

1. Quizzes, Labs, Exams
2. Quizzes, Labs, Exams
3. Quizzes, Labs, Exams
4. Quizzes, Labs, Exams
5. Quizzes, Labs, Exams
6. Quizzes, Labs, Exams
7. Essay, Group Power Point Project

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

Geol 1303	Physical Geology	Geology: Earth in Perspective | 3rd Edition	Wicander and Monroe	9780357117330	Cengage LearningPrin

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.

Course Requirements/Grading System:

Grading Components are:

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

Wharton County Junior College

Core Curriculum Review Form

Foundational Component Area: Core 030: Life & Physical Science

Course Prefix & Suffix: GEOL 1303

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, write essay/term paper	Lab exercises/reports, Lab Practicals, quizzes, essay/term paper, End of Course Final/Exit
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, essay/term paper, Open-Ended Exam Question, Final/Exit
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, write essay/term paper	Lab exercises/reports, Lab Practicals, quizzes, essay/term paper, End of Course Final/Exit

Wharton County Junior College

Core Curriculum Review Form

Foundational Component Area: Core 030: Life & Physical Science

Course Prefix & Suffix: GEOL 1303

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, group presentations
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, essays, and quizzes.

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Core Curriculum Review Form

Foundational Component Area: Core 030: Life & Physical Science

Course Prefix & Suffix: GEOL 1303

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

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Core Curriculum Review Form

Foundational Component Area: Core 030: Life & Physical Science

Course Prefix & Suffix: GEOL 1303

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) 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