

Administrative Master Syllabus

Course Information

Course Title	Physical Geology
Course Prefix, Num. and Title	GEOL 1303
Division	Life Sciences
Department	Biology
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:	3:3:0
Lab/Other Hours	
Equated Pay Hours	3
Lab/Other Hours Breakdown: Lab Hours	Enter Lab Hours Here.
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:		
Department Head:		
Division Chair:		
Dean/VPI:		
Approved by CIR:		



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, Reed Wicander and James Monroe, Cengage Publishing, (January 1, 2013)

ISBN-13: 978-1- 133-10874-0

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: Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course.

Grading Components are:

- the “Lecture Average” = 75% of Student’s Overall Course Grade
- the “Course Final/EXIT” = 25% of Student’s Semester Course Grade

The “Lecture Average” is defined as the numerical average of components A, B, & C listed below. The average of these three components will constitute 75% of the “Student’s Overall Course Grade” and consists of:

- A. At least 3 major Lecture Exams (Not including the Final/EXIT)
- B. 1 - Essay/Term Paper (Grade equally weighted as a lecture exam)
- C. 1 - Group Power Point Project (no less than 5% of Lecture Grade)

The Final/EXIT:

- D. The Course Final/EXIT accounts for the last 25% of the student’s Overall Course Grade”

The Student’s Overall Course Grade is compiled by:

(“Lecture Average” times 3) plus (Final/EXIT grade), and divide all by 4 will equal the “Overall Student Course Grade”

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

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

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.
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.

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
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 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
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.