

## Administrative Master Syllabus

### Course Information

|                                      |   |
|--------------------------------------|---|
| <b>Course Title</b>                  | Historical Geology  |
| <b>Course Prefix, Num. and Title</b> | GEOL 1304   |
| <b>Division</b>                      | Life Sciences   |
| <b>Department</b>                    | Geology   |
| <b>Course Type</b>                   | Academic WCJC Core Course   |
| <b>Course Catalog Description</b>    | 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. |
| <b>Pre-Requisites</b>                | TSI satisfied in Reading and Writing; Credit for or concurrent enrollment in GEOL 1303 Physical Geology.  |
| <b>Co-Requisites</b>                 | Recommended co-requisite: GEOL 1104 Physical Geology (lab)  |

### Semester Credit Hours

|  |                                  |
|--|----------------------------------|
| <b>Total Semester Credit Hours (SCH): Lecture Hours:</b> | 3:3:0                            |
| <b>Lab/Other Hours</b>                                   |                                  |
| <b>Equated Pay Hours</b>                                 | 3                                |
| <b>Lab/Other Hours Breakdown: Lab Hours</b>              | Enter Lab Hours Here.            |
| <b>Lab/Other Hours Breakdown: Clinical Hours</b>         | Enter Clinical Hours Here.       |
| <b>Lab/Other Hours Breakdown: Practicum Hours</b>        | Enter Practicum Hours Here.      |
| <b>Other Hours Breakdown</b>                             | List Total Lab/Other Hours Here. |

### Approval Signatures

| Title                   | Signature | Date |
|-------------------------|-----------|------|
| <b>Prepared by:</b>     |           |      |
| <b>Department Head:</b> |           |      |
| <b>Division Chair:</b>  |           |      |
| <b>Dean/VPI:</b>        |           |      |
| <b>Approved by CIR:</b> |           |      |



**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:**

The Earth Through Time, by Harold Levin, 10th edition, Wiley Publishing, 2013.

ISBN-13: 978-1- 118-25467-7

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

- 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 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                                       |
| 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 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   |
| 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. |
| 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 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                                       |
| 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. |

Foundational Component Area.