Course Outline

COURSE:  GEOL 1  DIVISION:  10  ALSO LISTED AS:  

TERM EFFECTIVE:  Fall 2016  CURRICULUM APPROVAL DATE: 04/25/2016

SHORT TITLE: INTRO GEOLOGY L/L

LONG TITLE: Introduction to Geology

<table>
<thead>
<tr>
<th>Units</th>
<th>Number of Weeks</th>
<th>Type</th>
<th>Contact Hours/Week</th>
<th>Total Contact Hours</th>
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<tr>
<td>4</td>
<td>18</td>
<td>Lecture</td>
<td>3</td>
<td>54</td>
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<tr>
<td></td>
<td></td>
<td>Lab</td>
<td>3</td>
<td>54</td>
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<td></td>
<td>Other</td>
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<td>Total</td>
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COURSE DESCRIPTION:

A study of the earth and the physical properties which modify the earth; minerals, rocks, geologic structures and processes. ADVISORY: Eligible for English 250 and English 260.

PREREQUISITES:

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES

L - Standard Letter Grade

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

02 - Lecture and/or discussion
03 - Lecture/Laboratory
04 - Laboratory/Studio/Activity
05 - Hybrid
72 - Dist. Ed Internet Delayed

STUDENT LEARNING OUTCOMES:

1. Students will explain the scientific method. Measure: Exam

PLO:

4/27/2016
ILO: 1
GE-LO: A5, B5
Year assessed or anticipated year of assessment: 2020

2. Identify, describe, compare and contrast basic rocks and minerals Measure: Exam, Lab
PLO:
ILO: 1,2
GE-LO: B1, B4 B6, B8
Year assessed or anticipated year of assessment: 2020

3. Identify, describe, compare and contrast the elements of plate tectonics, earthquakes and vulcanism
Measure: Lab
PLO:
ILO: 2,1
GE-LO: B1, B4 B6, B8
Year assessed or anticipated year of assessment: 2020

4. Demonstrate ability at interpreting landforms from topographic maps and aerial photos Measure: Research paper, group project, written exam
PLO:
ILO: 1,2
GE-LO: B1, B4 B6, B8
Year assessed or anticipated year of assessment: 2020

5. Identify, describe, compare and contrast the concepts of physical and chemical weathering processes. Identify and describe the mass wasting processes and controls. Differentiate between renewable and non-renewable resources.
Measure: oral presentations
PLO:
ILO: 2,1
GE-LO: B1, B4 B6, B8
Year assessed or anticipated year of assessment: 2020

6. Identify, describe, compare and contrast river, coastal, desert and glacial processes and landforms
Measure: oral reports, research paper
PLO:
ILO: 2,1
GE-LO: B1, B4 B6, B8
Year assessed or anticipated year of assessment: 2020

7. Identify and describe the concepts of Geologic Time; identify and describe the fundamental concepts, principles, and interactions of Earth's systems applicable to the Geological Sciences. Measure: final examination
PLO:
ILO: 2,1,3
GE-LO: B1, B$ B6, B8
Year assessed or anticipated year of assessment: 2020

8. Demonstrate the ability to identify and describe examples of landforms and processes in diagrams and in a written report
Measure: Report
PLO:
ILO: 2,1,3
GE-LO: B1,B6, B8
CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS
Curriculum Approval Date: 04/25/2016

3 Lec/3 Lab Hours

CONTENT: Introduction to Geology; Minerals & Mineral Identification

STUDENT PERFORMANCE OBJECTIVES (SPO): Students will describe the scientific method and identify, compare & contrast the nature of minerals. Students will demonstrate an understanding of the major rock forming minerals by working with specimens in the classroom.

Lab#1/Mineral ID

OUT OF CLASS ASSIGNMENTS:
Reading text chapter/ Minerals & Mineral ID. Create list of minerals.

3 Lec/3 Lab Hours

CONTENT: Igneous Processes & Rock Identification

SPO: Students will identify, describe, compare & contrast the nature of igneous rocks & processes. Students will demonstrate an understanding of the major igneous rock types by working with specimens in the classroom.

Lab#2 Igneous Rock ID

OUT OF CLASS ASSIGNMENTS: Reading text/chapter/Igneous Rock ID
Create list of igneous rock types.

3 Lec/3 Lab Hours

CONTENT: Sedimentary Processes & Rock Identification

SPO: Students will identify, describe, compare & contrast the nature of sedimentary rocks & processes. Students will demonstrate an understanding of the major sedimentary rock types by working with specimens in the classroom.

Lab#3/Sedimentary Rock ID

OUT OF CLASS ASSIGNMENTS: Reading text chapter/Sedimentary Rocks & Structures. Create list of sedimentary rock types.

3 Lec/3 Lab Hours

CONTENT: Metamorphic Rocks & Processes

SPO: Students will identify, describe, compare & contrast the nature of metamorphic rocks & processes. Students will demonstrate an understanding of the major metamorphic rock types by working with specimens in the classroom.

Lab#4/Metamorphic Rock ID

OUT OF CLASS ASSIGNMENTS: Reading text chapter/Metamorphic Rock ID. Create list of metamorphic rock types.

3 Lec/3 Lab Hours

CONTENT: Topographic Maps & Aerial Photos. The Solar System
Lab Exam

SPO: Students will learn general mapping techniques using topographic maps & aerial photos. Students will identify & describe various physical features & landforms using the maps & photos. Students will describe the solar system.
Lab#5/Mapping Techniques
LAB EXAM/Hand specimen identification of mineral & rock samples.
OUT OF CLASS ASSIGNMENTS: Reading lab exercises workbook chapter/Topographic Mapping Techniques.
3 Lec/3 Lab Hours
CONTENT: Physical & Chemical Weathering
SPO: Students will identify, describe & compare weathering processes & products. Students will contrast the different landscapes that result from physical & chemical weathering.
Lab#6/Weathering Processes
OUT OF CLASS ASSIGNMENTS: Reading text chapter/Weathering Processes. Create a table comparing the resulting landforms.
3 Lec/3 Lab Hours
CONTENT: Plate Tectonics
SPO: Students will identify, describe, compare & contrast the basic elements of Plate Tectonics Theory. Students will demonstrate an understanding of how the theory is used to understand the global distribution of earthquakes & volcanism.
Lab#7/Plate Tectonics
OUT OF CLASS ASSIGNMENTS: Reading text chapter/Plate Tectonics. Create a list of the major tectonic plates & resulting volcanic landforms.
3 Lec/3 Lab Hours
CONTENT: Volcanic Processes & Landforms
SPO: Students will identify, describe, compare & contrast the different types of volcanic landforms & processes. Students will demonstrate an understanding of the variables that control volcanic eruptions.
OUT OF CLASS ASSIGNMENTS: Reading text chapter/Vulcanism. Create a table correlating volcanic igneous rock types with the volcanoes that produce them.
3 Lec/3 Lab Hours
CONTENT: Seismicity & Earthquakes
SPO: Students will identify, describe compare & contrast the basic elements of faulting & earthquake activity. Students will demonstrate an understanding of the general pattern of global seismicity as it relates to plate tectonics.
9/11/2014
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Lab#8/Seismicity & Earthquakes.
OUT OF CLASS ASSIGNMENTS: Reading text chapter/Earthquakes & Seismicity. Draw 4 offset strike slip fault lines with right lateral motion.
3 Lec/3 Lab Hours
CONTENT: River Systems & Processes; Renewable and Non-renewable Resources
SPO: Students will identify, compare & contrast the various elements of river systems, drainage basins & groundwater movement.
Students will describe the processes of erosion & sediment transport by running water & the landforms created by it.
Student will identify renewable and non-renewable resources
Lab#9/River Processes & Landforms
OUT OF CLASS ASSIGNMENTS: Reading text chapter/Stream Processes. Draw examples of the different drainage patterns
3 Lec/3 Lab Hours
CONTENT: Coastlines & Coastal Processes
SPO: Students will identify & describe the basic types of coastlines & the processes of erosion & sediment transport by waves.
Students will identify, compare & contrast erosional & depositional coastal landforms.
Lab#10/Coastal Processes & Landforms
OUT OF CLASS ASSIGNMENTS: Reading text chapter/Coastal Processes. Create a table contrasting types of coastlines with their plate tectonic history.
3 Lec/3 Lab Hours
CONTENT: Desert Landforms & Processes
SPO: Students will identify, contrast & compare the different types of deserts. Students will describe the development of desert landforms by the forces of wind & water erosion & deposition.
Lab#11/Desert Processes & Landforms
OUT OF CLASS ASSIGNMENTS: Reading text chapter/Deserts. Create a table comparing desert landscape evolution, plate tectonic history & global ice ages.
3 Lec/3 Lab Hours
CONTENT: Glacial Landforms & Processes
SPO: Students will identify & describe the different types of glaciers. Students will compare & contrast the glacial processes & how they produce erosional & depositional glacial landforms. Students will identify & describe the controls for global ice ages.
Lab#12/Glacial Processes & Landforms
OUT OF CLASS ASSIGNMENTS: Reading text chapter/Glacial Landforms & Processes. Create a list of global ice ages.
3 Lec/3 Lab Hours
CONTENT: Mass Wasting Processes
SPO: Students will identify, compare & contrast the different types of mass wasting. Students will describe the controls for mass wasting.
Lab#13/Mass Wasting Processes
OUT OF CLASS ASSIGNMENTS: Reading text chapter/Mass Wasting Processes. Create a list of the variables that control mass wasting.
3 Lec/3 Lab Hours
CONTENT: Geologic Time
SPO: Students will identify & describe the concepts of geologic time as it relates to the Relative & Absolute Geologic Time Scales.
Lab#14/Geologic Time
OUT OF CLASS ASSIGNMENTS: Reading text chapter/Geologic Time. Create a table contrasting the relative & absolute time scales.
3 Lec/3 Lab Hours
CONTENT: Geologic Field Exercise
9/11/2014
5
SPO: Students will demonstrate the ability to identify & describe various landforms & geologic processes on a geologic field trip.
OUT OF CLASS ASSIGNMENTS: Review reading topo graphic maps in lab exercise workbook before field exercise.
2 Hours
Final

METHODS OF INSTRUCTION:
Lecture/discussion. Laboratory Exercises.

METHODS OF EVALUATION:
Category 1 - The types of writing assignments required:
Percent range of total grade: 30 % to 50 %
Essay Exams
Term or Other Papers

Category 2 - The problem-solving assignments required:
Percent range of total grade: 20 % to 40 %
Quizzes
Exams

Category 3 – The types of skill demonstrations required:
Percent range of total grade: 10 % to 20 %
Class Performance/s

Category 4 - The types of objective examinations used in the course:
Percent range of total grade: 20 % to 40 %
Multiple Choice

REPRESENTATIVE TEXTBOOKS:
Required:
other appropriate college level text.
Reading level of text, Grade: College Level Verified by: Prentice Hall

ARTICULATION and CERTIFICATE INFORMATION
Associate Degree:
    GAV B1, effective 201070
    GAV B3, effective 201070
CSU GE:
    CSU B1, effective 201070
    CSU B3, effective 201070
IGETC:
    IGETC 5A, effective 201070
    IGETC 5C, effective 201070
CSU TRANSFER:
    Transferable CSU, effective 201070
UC TRANSFER:
    Transferable UC, effective 201070

SUPPLEMENTAL DATA:
Basic Skills: N
Classification: Y
Noncredit Category: Y
Cooperative Education:
Program Status: 1 Program Applicable
Special Class Status: N
CAN: GEOL2
CAN Sequence: XXXXXXXX
CSU Crosswalk Course Department: GEOL
CSU Crosswalk Course Number: 1
Prior to College Level: Y
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: N
Occupational Course: E
Maximum Hours:
Minimum Hours:
Course Control Number: CCC000166363
Sports/Physical Education Course: N
Taxonomy of Program: 191400