Course Outline

COURSE: GEOL 1        DIVISION: 10        ALSO LISTED AS:

TERM EFFECTIVE: Summer 2020        CURRICULUM APPROVAL DATE: 06/09/2020

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>
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<td>54</td>
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<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: College level reading and writing skills.

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
047 - Laboratory - LEH 0.7
05 - Hybrid
71 - Dist. Ed Internet Simultaneous
72 - Dist. Ed Internet Delayed
73 - Dist. Ed Internet Delayed LAB
737 - Dist. Ed Internet LAB-LEH 0.7
STUDENT LEARNING OUTCOMES:
By the end of this course, a student should:

1. Students will explain the scientific method.

2. Identify, describe, compare and contrast basic rocks and minerals

3. Identify, describe, compare and contrast the elements of plate tectonics, earthquakes and vulcanism

4. Demonstrate ability at interpreting landforms from topographic maps and aerial photos

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.

6. Identify, describe, compare and contrast river, coastal, desert and glacial processes and landforms

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.

8. Demonstrate the ability to identify and describe examples of landforms and processes in diagrams and in a written report

9. Demonstrate knowledge of the solar system by describing its parts and their relationship.

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS
Curriculum Approval Date: 06/09/2020

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.

6/1/2020
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
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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.
OUT OF CLASS ASSIGNMENTS:
Required Outside Hours: 108
Assignment Description:
1. Regularly assigned homework that requires students to analyze and study pertinent text material, solved examples and lecture notes.
2. Regularly assigned homework that requires students to apply the principles and skills covered in class by solving related problems.

METHODS OF EVALUATION:
Writing assignments
Percent of total grade: 30.00 %
Percent range of total grade: 30 % to 50 % Essay Exams
Problem-solving assignments
Percent of total grade: 20.00 %
Percent range of total grade: 20 % to 40 % Quizzes Exams
Skill demonstrations
Percent of total grade: 10.00 %
Percent range of total grade: 10 % to 20 % Class Performance/s
Objective examinations
Percent of total grade: 20.00 %
Percent range of total grade: 20 % to 40 % Multiple Choice

REPRESENTATIVE TEXTBOOKS:
Reading Level of Text, Grade: 12 Verified by: Jennifer Nari
Recommended Representative Textbooks

Reading Level of Text, Grade: 12 Verified by: Jennifer Nari
ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:
- GAV B1, effective 202050
- GAV B3, effective 201070
- GAV B4, effective 202050

CSU GE:
- CSU B1, effective 202050
- CSU B3, effective 201070
- CSU B4, effective 202050

IGETC:
- IGETC 5A, effective 202050
- IGETC 5C, effective 202050

CSU TRANSFER:
- Transferable CSU, effective 202050

UC TRANSFER:
- Transferable UC, effective 202050

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