Course Outline

COURSE: GEOL 13  DIVISION: 10  ALSO LISTED AS:

TERM EFFECTIVE: Fall 2013  Inactive Course

SHORT TITLE: ENVIRONMENTAL GEOL

LONG TITLE: Environmental 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>3</td>
<td>18</td>
<td>Lecture: 3</td>
<td>54</td>
<td></td>
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<td></td>
<td></td>
<td>Lab: 0</td>
<td>0</td>
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<td>Other: 0</td>
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<td></td>
<td>Total: 3</td>
<td>54</td>
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COURSE DESCRIPTION:

The impact of geologic processes on humans, their structures, and environment. Discussion of the causes, effects, and solution of geological problems in rural and urban settings. Topics will include the role of geology in waste disposal and other land use issues. 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

STUDENT LEARNING OUTCOMES:

1. Students will describe, compare and contrast geologic processes.
   ILO: 2,7,1
   Measure: Exam, class discussion, term paper.

2. Students will identify, describe, compare and contrast the chemical, geologic, environmental and economic characteristics of the
basic rock types.
ILO: 2,7,1
Measure: Exam, class discussion, term paper.
3. Students will describe, compare and contrast the features of different types of faults and will be able to locate and identify important fault systems on a map.
ILO: 2,7,1
Measure: Exam, class discussion, term paper.
4. Students will describe, compare and contrast different types of volcanoes and eruptions and describe the specific impacts of each type upon people and structures.
ILO: 2,7,1,4
Measure: Exam, class discussion, term paper.
5. Students will analyze and describe the effect of urbanization upon river dynamics and the potential for flooding.
ILO: 2,7,1,4
Measure: Exam, class discussion, term paper.
6. Students will analyze, identify, describe, compare and contrast the effects of various man-made structures along the ocean coastline.
ILO: 2,7,1,4,5
Measure: Exam, class discussion, term paper.
7. Students will describe the development of soils and their transport.
ILO: 2,7,1
Measure: Exam, class discussion, term paper.
8. Students will analyze, identify, describe, compare, and contrast the mechanisms of landslides and means to prevent them.
ILO: 2,7,1
Measure: Exam, class discussion, term paper.
9. Students will analyze, identify and describe the processes and the social and environmental impacts of oil, gas, and mineral exploration.
ILO: 2,7,1,4
Measure: Exam, class discussion, term paper.
10. Students will analyze, identify, describe, compare and contrast major sources of air, soil and groundwater pollution.
ILO: 2,7,1,4
Measure: Exam, class discussion, term paper.
11. Students will analyze, identify, describe, compare and contrast different types of waste disposal facilities and their social and environmental impact.
ILO: 2,7,1,4
Measure: Exam, class discussion, term paper.

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS
Inactive Course: 02/25/2013
6 Hours
CONTENT

9/11/2014
Geologic Processes
STUDENT PERFORMANCE OBJECTIVES
Students will describe, compare and contrast weathering of rocks, erosion, subsurface groundwater, rivers and streams, mountain building, rock formation, aeolian transport.
OUT-OF-CLASS ASSIGNMENTS
Reading and questions from text. Term Paper.
6 Hours
CONTENT
Rocks and Minerals
STUDENT PERFORMANCE OBJECTIVES
Students will identify hand, describe, compare and contrast various rocks and minerals that are important in the environment.
OUT-OF-CLASS ASSIGNMENTS
Reading and questions from text. Term Paper.
6 Hours
CONTENT
Earthquakes and Faults
STUDENT PERFORMANCE OBJECTIVES
Students will identify, describe, compare and contrast the formation and mechanism of thrust faults, strike-slip faults, normal faults, and reverse faults.
OUT-OF-CLASS ASSIGNMENTS
Reading and questions from text. Term Paper.
3 Hours
CONTENT
Volcanism
STUDENT PERFORMANCE OBJECTIVES
Students will describe, compare and contrast different types of volcanoes and eruptions and describe the specific impacts of each type upon people and structures.
OUT-OF-CLASS ASSIGNMENTS
Reading and questions from text. Term Paper.
3 Hours
CONTENT
The Water Cycle and Groundwater
STUDENT PERFORMANCE OBJECTIVES
Students will describe, compare and contrast natural and man-made streams and rivers and their potential for flooding. Students will describe methods for controlling flooding. Students will describe the social and environmental effects of surface and subsurface water.
OUT-OF-CLASS ASSIGNMENTS
Reading and questions from text. Term Paper.
6 Hours
CONTENT
Coastal Processes
STUDENT PERFORMANCE OBJECTIVES
Students will describe long-shore transport, summer and winter beaches,
and mass transport as it pertains to the coastal zone. Students will identify, describe, compare and contrast seawalls, breakwaters, piers, and other coastal structures designed and built to control the dynamic processes at the land/sea interface. Students will describe the social, economic, and environmental impact of these structures.

OUT-OF-CLASS ASSIGNMENTS
Reading and questions from text. Term Paper.
3 Hours

CONTENT
Soils and Soil Transport
STUDENT PERFORMANCE OBJECTIVES
Students will describe the development of the soil horizon from weathering to erosion to transport to deposition to depletion. Students will describe the social, economic and environmental impact of this process.

OUT-OF-CLASS ASSIGNMENTS
Reading and questions from text. Term Paper.
6 Hours

CONTENT
Mining and Energy Resource Recovery
STUDENT PERFORMANCE OBJECTIVES
Students will identify, describe, compare and contrast the important social and economic energy resources and the methods by which they are recovered from Earth. Students will describe the costs and benefits of each resource with the effect that each has on the social, economic, and environmental state of various societies.

OUT-OF-CLASS ASSIGNMENTS
Reading and questions from text. Term Paper.
6 Hours

CONTENT
Waste Disposal
STUDENT PERFORMANCE OBJECTIVES
Students will identify "waste". Students will identify, describe, compare and contrast the various methods for waste disposal. Students will describe the role of the geological landscape in the efficacy of various disposal methods. Students will describe the safety, social implications, political implications and economic implications of various waste disposal methods.

OUT-OF-CLASS ASSIGNMENTS
Reading and questions from text. Term paper.
6 Hours

CONTENT
Pollution
STUDENT PERFORMANCE OBJECTIVES
Students will identify, describe, compare and contrast sources of environmental pollution. Students will describe methods for mitigating the effects of these sources and the role of the geological landscape. Students will describe the social and environmental costs of pollution.
and the economic benefits to corporations. Students will describe the 
political issues regarding the costs and benefits.

OUT-OF-CLASS ASSIGNMENTS
Reading and questions from text. Term Paper.
3 Hours
Review for Final Exam. Take Final Exam.
Included in content section.

METHODS OF INSTRUCTION:
Lecture, field trips, group work, projects

METHODS OF EVALUATION:
The types of writing assignments required:
Written homework
Term papers
The problem-solving assignments required:
Quizzes
Exams
The types of skill demonstrations required:
None
The types of objective examinations used in the course:
None
Other category:
None
The basis for assigning students grades in the course:
Writing assignments: 30% - 50%
Problem-solving demonstrations: 50% - 70%
Skill demonstrations: 0% - 0%
Objective examinations: 0% - 0%
Other methods of evaluation: 0% - 0%

REPRESENTATIVE TEXTBOOKS:
Carla W. Montgomery; "Environmental Geology", 7th edition; McGraw-Hill 
Publishers; 2007., or other appropriate college level text.
Reading level of text: 12 grade. Verified by: Russell Lee using MS 
Word

ARTICULATION and CERTIFICATE INFORMATION
Associate Degree:
GAV B1, effective 200670
CSU GE:
CSU B1, effective 200670
IGETC:
IGETC 5A, effective 200670
CSU TRANSFER:
Transferable CSU, effective 201370
UC TRANSFER:
Transferable UC, effective 200670
SUPPLEMENTAL DATA:
Basic Skills: N
Classification: A
Noncredit Category: Y
Cooperative Education:
Program Status: 1 Program Applicable
Special Class Status: N
CAN:
CAN Sequence:
CSU Crosswalk Course Department: GEOL
CSU Crosswalk Course Number: 13
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: CCC000456092
Sports/Physical Education Course: N
Taxonomy of Program: 191400