



Los Angeles Community College District

COURSE OUTLINE

(Replaces PNCR and Course Outline)

Section I: BASIC COURSE INFORMATION

OUTLINE STATUS: Course Update, Degree Applicable, 2008-2009

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1. COLLEGE: Southwest

2. SUBJECT (DISCIPLINE) NAME¹: Geology
(40 characters, no abbreviations)

3. COURSE NUMBER: Geology 6

4. COURSE TITLE: Physical Geology Laboratory

5. UNITS: 2

6. CATALOG COURSE DESCRIPTION -- Provide a description of the course, including an overview of the topics covered:

This course is the laboratory for Geology 1. It provides a hands-on investigation in greater depth of topics covered in Geology 1, such as topography, minerals, rocks, earthquakes, plate tectonics, and geologic time.

7. CLASS SCHEDULE COURSE DESCRIPTION -- Provide a brief description of the course, including an overview of the topics covered:

Physical Geology Laboratory is for students needing science laboratory credit to meet university transfer requirements. This course is the laboratory for Geology 1. It will provide hands-on experience for topics covered in Geology 1.

8. INITIAL COLLEGE COURSE APPROVAL DATE: 1974
OUTLINE APPROVAL DATE: 1/13/09

9. UPDATES, IF EXISTING COURSE: (check all applicable boxes):

- Content Last Update: 1/13/09
Objectives Last Update: 1/13/09
College Specific Course Attributes/Data Elements Last Update:
Districtwide Course Attributes/Data Elements Last Update:
Other (describe) Last Update: 1/13/09

- a. Change CATALOG COURSE DESCRIPTION.
b. Change CLASS SCHEDULE COURSE DESCRIPTION.

¹ Underlined course attributes are the same for the course throughout the LACCD; all other course attributes are college specific.

10. CLASS HOURS:

	"Standard Hours" per Week (based on 18 weeks)	Total Hours per Term (hrs per week x 18)	Units
Lecture:	1	18	1
Lab/activity (w/ homework):	2	36	1
Lab/activity (w/o homework):			
Total:	3	54	2

Note: The Carnegie Rule and Title 5, section 55002 sets forth the following minimum standards: 1 unit = 1 hour lecture per week, 2 hours homework per week; **OR** 2 hours per week of lab with homework; **OR** 3 hours of lab per week without homework. The hours per week are based on a standard 18-week calendar. Lecture also includes discussion and/or demonstration hours, laboratory includes activity and/or studio hours.

11. PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT

Note: The LACCD's *Policy on Prerequisites, Corequisites and Advisories* requires that the curriculum committee take a separate action verifying that a course's prerequisite, corequisite or advisory is an "appropriate and rational measure of a student's readiness to enter the course or program" and that the prerequisite, corequisite or advisory meets the level of scrutiny delineated in the policy.

. Prerequisites: **None** (If Yes, complete information below)

Subject	Number	Course Title	Units	Validation Approval Date (official use only)

. Corequisite: **Yes** (If Yes, complete information below)

Subject	Number	Course Title	Units	Validation Approval Date (official use only)
Geology	1	Physical Geology	3	1/13/08 (Previously 1/18/97)

. Advisories: **None** (If Yes, complete information below)

Subject	Number	Course Title	Units	Validation Approval Date (official use only)

12. REPETITIONS -- Number of times course may be repeated for credit (three maximum): 0 (see: Section V, #9) **None**

13. OTHER LIMITATIONS ON ENROLLMENT (see Title 5, Section 58106 and Board Rule 6803 for policy on allowable limitations. Other appropriate statutory or regulatory requirements may also apply):

None

Section II: COURSE CONTENT AND OBJECTIVES

1. COURSE CONTENT AND OBJECTIVES:

COURSE CONTENT AND SCOPE – Lecture: If applicable, outline the topics included in the lecture portion of the course (outline reflects course description, all topics covered in class).	Hours per topic	COURSE OBJECTIVES - Lecture (If applicable): Upon successful completion of this course, the student will be able to... (Use action verbs – see Bloom’s Taxonomy below for “action verbs requiring cognitive outcomes.”)
1. Topographic maps a. Contour lines and topography b. Map coordinates c. Map projections d. Map features and symbols f. Range & Township - property descriptions	2	1. Describe the features of a topographic map.
2. Mineral identifications a. What is a mineral b. Mineral properties c. How to identify minerals	2	2. Define and recognize properties of a mineral, apply basic chemistry to mineral structure, and recognize mineral groups and their origin and subgroups.
3. Igneous rock identification a. Magma and the origin of igneous rocks b. Textures of igneous rocks c. Mineral composition of igneous rocks d. Igneous rock classification	1	
4. Sedimentary rock identification a. Origin of sedimentary rocks b. Clastic sedimentary rocks c. Chemical sedimentary rocks d. Occurrence of sedimentary rocks	1	
5. Metamorphic rock identification a. Origin of metamorphic rocks b. Foliated rock textures c. Regional metamorphic rocks d. Contact metamorphic rocks	1	
6. The geologic column and geologic time a. Absolute time b. Relative time c. The principles used to construct a relative time chronology d. Unconformities	2	3. Discuss the geologic time scale and evaluate principles and evidence used to construct relative dating sequences.
7. Modern and ancient shorelines a. Depositional landforms produced by waves b. Erosional landforms produced by waves c. Evolution of a shoreline d. Deltas	1	4. Discuss the formation and characteristics of ocean waves and how shoreline features are formed.

8. Seismic waves a. Types of seismic waves b. Reading a seismogram c. Locating an epicenter d. The time of origin of the earthquake	2	5. Describe earthquakes, faults, and earthquake waves and how they can be measured, predicted, and located.
9. Faults and earthquakes a. Nomenclature of faults b. Types of faults	2	6. Discuss plate tectonics and continental drift and evaluate evidence supporting plate tectonics.
10. Plate tectonics a. The major components of the Earth b. Plate movement and plate boundaries	2	7. Examine the ocean floor with its plate boundaries, hot spots, and relationship to plate tectonics.
11. Seafloor spreading and hot spots a. Plate boundaries and seafloor spreading b. Origin of hot spots c. Radiometric dating	1	8. Discuss the importance and movement of groundwater and how it relates to water table contours and pollution.
12. Groundwater movement and pollution a. Groundwater b. Water table contours c. Flow lines	1	
Total Lecture hours*	18 hrs	

COURSE CONTENT AND SCOPE -- <u>Laboratory:</u> <i>If applicable, outline the topics included in the laboratory portion of the course (outline reflects course description, all topics covered in class).</i>	Hours per Topic	COURSE OBJECTIVES - <u>Laboratory</u> (If applicable): Upon successful completion of this course, the student will be able to... <i>(Use action verbs – see Bloom's Taxonomy below for "action verbs requiring cognitive outcomes.")</i> ²
THE COURSE CONTENT LISTED IS COVERED DURING THE LECTURE HOUR OF THE CLASS.		MOST OF THE OBJECTIVES LISTED ARE ACHIEVED THROUGH EXERCISES CONDUCTED DURING THE TWO HOUR LABORATORY PERIOD. OTHER OBJECTIVES ARE ASSESSED BY EXAMINATION.
1. Topographic maps a. Contour lines and topography b. Map coordinates c. Map projections d. Map features and symbols f. Range & Township - property descriptions	4	1. Locate on a topographic map the following: map name, date, North direction, contour interval, map scales, roads, buildings, water, canyons, and ridges and use the Range & Township system to describe a parcel of land.
2. Mineral identifications a. What is a mineral b. Mineral properties c. How to identify minerals	2.2	2. Recognize on samples, the properties of minerals and perform a hardness and streak test and use the flow chart procedure to identify minerals.
	2.2	

² In general "activity" courses or portions of courses are classified "laboratory."

<p>3. Igneous rock identification</p> <ul style="list-style-type: none"> a. Magma and the origin of igneous rocks b. Textures of igneous rocks c. Mineral composition of igneous rocks d. Igneous rock classification 		<p>3. Recognize the minerals and texture in igneous rocks, or the rock color and use texture and color to classify igneous rocks.</p>
<p>4. Sedimentary rock identification</p> <ul style="list-style-type: none"> a. Origin of sedimentary rocks b. Clastic sedimentary rocks c. Chemical sedimentary rocks d. Occurrence of sedimentary rocks 	2.2	<p>4. Using particle size and shape and mineral composition, identify and name sedimentary rock samples.</p>
<p>5. Metamorphic rock identification</p> <ul style="list-style-type: none"> a. Origin of metamorphic rocks b. Foliated rock textures c. Regional metamorphic rocks d. Contact metamorphic rocks 	2.2	<p>5. Recognizing foliated rock textures on metamorphic rock samples, identify and distinguish between regional and contact metamorphic rocks.</p>
<p>6. The geologic column and geologic time</p> <ul style="list-style-type: none"> a. Absolute time b. Relative time c. The principles used to construct a relative time chronology d. Unconformities 	2.2	<p>6. Using the principles of relative time, construct a geologic column in correct chronological order.</p>
<p>7. Modern and ancient shorelines</p> <ul style="list-style-type: none"> a. Depositional landforms produced by waves b. Erosional landforms produced by waves c. Evolution of a shoreline d. Deltas 	2.2	<p>7. Recognize and differentiate between depositional and erosional landforms and describe the evolution of a shoreline and a delta.</p>
<p>8. Seismic waves</p> <ul style="list-style-type: none"> a. Types of seismic waves b. Reading a seismogram c. Locating an epicenter d. The time of origin of the earthquake 	2.2	<p>8. Use seismic data to plot the epicenter location on a map and determine the time of origin of the earthquake.</p>
<p>9. Faults and earthquakes</p> <ul style="list-style-type: none"> a. Nomenclature of faults b. Types of faults 	2.2	<p>9. Reconstruct the land surface after an earthquake on a faults block diagram and locate the fault planes in cross-sectional diagrams.</p>
<p>10. Plate tectonics</p> <ul style="list-style-type: none"> a. The major components of the Earth b. Plate movement and plate boundaries 	2	<p>10. Locate and draw on a world map all of the divergent and convergent plate boundaries, and all of the transform boundaries.</p>
<p>11. Seafloor spreading and hot spots</p> <ul style="list-style-type: none"> a. Plate boundaries and seafloor spreading b. Origin of hot spots c. Radiometric dating 	2.2	<p>11. For three volcanoes use volcano age data and distance from the hot spot to calculate the rate of plate movement.</p>
<p>12. Groundwater movement and pollution</p>		<p>12. Draw groundwater flow lines on a water table contour map and using pollution data to plot the flow of polluted water, predict which wells and streams will become polluted.</p>

<p>a. Groundwater b. Water table contours c. Flow lines</p> <p>THREE FIELD TRIPS ARE OFFERED. THE STUDENTS ARE REQUIRED TO ATTEND AT LEAST TWO OF THE THREE.</p> <p>1. <u>Vasquez Rocks</u> (The students will...) a. Observe & feel the sedimentary rocks. b. Observe sorting in the rocks. c. Observe the sequence of layers of rocks. d. Observe granitic boulders and cobbles. e. Observe and feel weathered hornblende. f. Observe and feel rock fragments and soil. g. Observe blocks of rock moving down slope. h. Observe and feel a disconformity. i. Observe steam channels. j. Observe ventifacts. k. Observe and feel slickensides. l. Find features on a topographic map. m. Observe the uses of a brunton compass. n. Use a topographic map to navigate. o. Observe stream channels and erosion. p. Observe and feel alluvial deposits. q. Observe and feel a tuff bed.</p> <p>2. <u>Coastal Drive</u> (The student will...) a. Observe the cliffs and distant coast. b. Observe waves, breakwater and beach. c. Observe wave movement on the sand. d. Observe wave cut cliffs. e. Observe evidence of a fault. f. Observe many examples of mass wasting. g. Observe the Malibu Lagoon and delta. h. Observe tuff beds in the mountains. i. Observe stream sediments. j. Observe sand dunes and desert pavement. k. Observe & feel a volcanic ash flow & pumice. m. Observe sea caves, sea arches & sea caves. n. Observe contact metamorphism and rocks. o. Observe an aedeasite dike. p. Observe Pt. Mugu estuary. q. Observe the lagoon, barrier island & delta. r. Observe the Channel Islands</p> <p>3. <u>San Andreas Fault</u> (The student will...) a. Observe terrain on both sides of the fault. b. Observe a fault scarp.</p>	<p>5</p> <p>5</p> <p>5</p>	<p>OBJECTIVES FOR THE FIELD TRIPS ACTIVITIES.</p> <p>The student will compare their impression of what they learned in class to the to a real example in the natural environment.</p> <p>The student will inspect through direct observation, and often touch, the subjects of lectures.</p> <p>The students will discover on their own, subjects of interest and can learn by observation or asking questions.</p> <p>The student will compare their impression of what they learned in class to the to a real example in the natural environment.</p> <p>The student will inspect through direct observation, and often touch, the subjects of lectures.</p> <p>The students will discover on their own, subjects of interest and can learn by observation or asking questions.</p> <p>The student will compare their impression of what they learned in class to the to a real example in the natural environment.</p> <p>The student will inspect through direct observation, and often touch, the subjects of lectures.</p>
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<ul style="list-style-type: none"> c. Observe the fault trace. d. Observe & feel mylonite and crushed rock. e. Observe the fault valley. f. Observe a braided stream. g. Observe the pattern of stream sediments. h. Observe mass wasting. i. Observe a long line of willow trees. j. Observe sag ponds. k. Observe the Tehachapi Mountains. m. Observe the Antelope Valley. n. Observe and feel slickensides and slate. o. Observe and feel fused sandstone. p. Conclude that millions of years ago the location was the beach. q. Observe the Cactus Queen Gold Mine. r. Observe and feel folded and faulted rocks. s. Observe and feel vanes of gypsum. 		<p>The students will discover on their own, subjects of interest and can learn by observation or asking questions.</p>
<p>Total Lab hours*</p>	<p>36 hrs</p>	

*Total lecture and laboratory hours (which include the final examination) must equal totals on page 1.

Bloom's Taxonomy

SIMPLE SKILLS <<----->> COMPLEX SKILLS					
			Critical Thinking		
<u>Knowledge</u>	<u>Comprehension</u>	<u>Application</u>	<u>Analysis</u>	<u>Synthesis</u>	<u>Evaluation</u>
define	translate	interpret	distinguish	compose	judge
repeat	restate	apply	analyze	plan	appraise
record	discuss	employ	differentiate	propose	evaluate
list	describe	use	appraise	design	rate
recall	recognize	demonstrate	calculate	formulate	compare
name	explain	dramatize	experiment	arrange	value
relate	express	practice	test	assemble	revise
underline	identify	illustrate	compare	collect	score
	locate	operate	contrast	construct	select
	report	schedule	criticize	create	choose
	review	shop	diagram	set up	assess
	tell	sketch	inspect	organize	estimate
			debate	prepare	measure
			inventory		
			question		
			relate		
			solve		
			examine		
			categorize		

Course
 Program
 Institutional
 (check one box above)

LASC STUDENT LEARNING OUTCOMES MATRIX

Course/Program/Institutional Title: Geology 6, Physical Geology Laboratory
 Faculty/Staff Participants: Paul Doose, Instructor; Glenn Yoshida, Chair

SLO Review, 1.7.09

The student will... (outcome)	As measured by the following method.... (assessment strategy)	And, if applicable, scored by the following learning rubric. (provide attachment)	Results are examined to determine if the outcome is achieved. Include planned or actual assessment date. (results & evaluation)	Recommendations to improve teaching and learning. (modifications)
1. demonstrate an understanding of some earth processes, such as volcanic activity, weathering, earthquakes, and mountain building. 2. demonstrate an understanding of plate tectonics and how it relates to other geologic processes. 3. apply critical thinking to solve problems.	1. The students performance on various embedded class exercises during the semester. 2. The students performance on various embedded class exercises during the semester. 3. The students performance on various embedded class exercises during the semester.	1. NA 2. NA 3. NA	1. Spring 2010 2. Fall 2009 3. Spring 2009	1. TBA 2. TBA 3. TBA

curricommSLOcourseoutlineAddendum, Approved Curriculum Committee, 2/29/08; Approved Academic Senate, 3/11/08

2. REQUIRED TEXTS:

Provide a representative list of textbooks and other required reading; include author, title and date of publication:

Zumberge, Rutherford, and Carter, Laboratory Manual for Physical Geology, 14th ed, McGraw Hill, 2009

3. SUPPLEMENTARY READINGS:

Reading assignments may include, but are not limited to the following:

None

4. WRITING ASSIGNMENTS:

Title 5, section 55002 requires grades to be “based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students.” Writing assignments in this course may include, but are not limited to the following:

Field Trip Report - On the Geology Field Trips students are asked to find evidence for geologic processes they studied in class and write about how the evidence they saw supports the existence of the process.

5. REPRESENTATIVE OUTSIDE ASSIGNMENTS:

Out of class assignments may include, but are not limited to the following:

Weekly reading assignments in the required text.

6. REPRESENTATIVE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING:

Title 5, section 55002(a) requires that a degree-applicable course have a level of rigor that includes “critical thinking and the understanding and application of concepts determined by the curriculum committee to be at college level”. Critical thinking may include, but is not limited to analysis, synthesis, and evaluation. Provide examples of assignments that demonstrate critical thinking.

a. The identification of minerals.

The identification of a mineral requires that the student analyze the unknown mineral sample for evidence of its physical properties. This may include conducting tests, such as a hardness test or a streak test. The student then evaluates the information obtained to determine what went well and which properties seem the most reliable. The student then synthesizes the properties into a description of the unknown mineral and looks to match it with one of the minerals described in the text.

b. The geologic column and geologic time.

Using knowledge of the principles of relative time discussed in the reading and lecture, the student analyses the diagram for evidence of where to apply those principles and then synthesizes a correct relative time chronology for the geologic column.

c. Modern and Ancient shoreline.

This exercise builds on knowledge gained from the two class sessions on topographic maps, as well as, the reading and lecture describing shoreline processes and features. The students are given a list of shoreline features and asked to analyze more than a dozen topographic maps of local coastline looking for evidence of those features. The students note where they found the shoreline feature and on which map. Some questions require synthesis of map symbols, shoreline features and coastal processes, such as, determining the direction of sand movement along the beach and describing the evidence used to make that determination.

7. METHODS OF EVALUATION:

Title 5, section 55002 requires grades to be “based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays, or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students.” Methods of evaluation may include, but are not limited to the following (please note that evaluation should measure the outcomes detailed “Course Objectives” at the beginning of Section II):

Each weekly exercise is evaluated.
Rock and mineral quiz.
Final exam.

8. METHODS OF INSTRUCTION:

Methods of instruction may include, but are not limited to the following:

- Lecture
- Discussion
- Laboratory
- Activity
- Field Experience
- Independent Study
- Other (explain)

Field trips to geological sites

9. SUPPLIES:

List the supplies the student must provide.

Normal school supplies.

10. COMPUTER COMPETENCY:

If applicable, explain how computer competency is included in the course.

Students are asked to type the Field Trip reports.

11. INFORMATION COMPETENCY:

Information competency is the ability to find, evaluate use, and communicate information in all its various formats. It combines aspects of library literacy, research methods and technological literacy. Information competency includes consideration of the ethical and legal implications and requires the application of both critical thinking and communications skills. If applicable, explain how information competency is included in the course.

During the three Geology Field Trips the students are shown how to use their eyes, touch, and other senses to gather information from the rocks in the area. Taking that information, coupled with what was learned in class and using critical thinking, they can construct a geologic history of the area. Reading the rocks can be compared to reading a book. This is one of the few classes where students get a chance to go into the field and gather information directly from their surroundings.

12. DIVERSITY:

If applicable, explain how diversity (e.g., cultural, gender, etc.) is included in the course.

Students of all cultures, gender, etc. are encouraged to enroll in this class.

13. SCANS COMPETENCIES (required for all courses with vocational TOP Codes; recommended for all courses):

SCANS (**S**ecretary's **C**ommission on **N**ecessary **S**kills) are skills the Department of Labor identified, in consultation with business and industry leaders, which reflect the skills necessary for success in the workplace. Check the appropriate boxes to indicate the areas where students will develop the following skills (please note that all SCANS competencies do not apply to all courses):

RESOURCES

- Managing Time:** Selecting relevant goal-related activities, ranking them in order of importance, allocating time to activities, and understanding, preparing and following schedules.
- Managing Money:** Using or preparing budgets, including making cost and revenue forecasts; keeping detailed records to track budget performance, and making appropriate adjustments.
- Managing Material and Facility Resources:** Acquiring, storing, allocating, and distributing materials, supplies, parts, equipment, space or final products in order to make the best use of them.

INTERPERSONAL

- Participating as Member of a Team:** Working cooperatively with others and contributing to group's efforts with ideas, suggestions and effort.
- Teaching Others New Skills:** Helping others learn needed knowledge and skills.
- Exercising Leadership:** Communicating thoughts, feelings, and ideas to justify a position, encouraging, persuading, convincing or otherwise motivating an individual or group, including responsibly challenging existing procedures, policies or authority.
- Negotiating:** Working toward agreement that may involve exchanging specific resources or resolving divergent interests.
- Working with Cultural Diversity:** Working well with men and women and with people from a variety of ethnic, social, or educational backgrounds.

INFORMATION

- Acquiring and Evaluating Information:** Identifying a need for data, obtaining the data from existing sources or creating them, and evaluating their relevance and accuracy.
- Organizing and Maintaining Information:** Organizing, processing and maintaining written or computerized records and other forms of information in a systematic fashion.
- Interpreting and Communicating Information:** Selecting and analyzing information and communicating the results of others, using oral, written, graphic, pictorial, or multimedia methods.
- Using Computers to Process Information:** Employing computers to acquire, organize, analyze and communicate information.

SYSTEMS

- Understanding Systems:** Knowing how social, organizational and technological systems work and operating effectively with them.
- Monitoring and Correcting Performance:** Distinguishing trends, predicting impacts of actions on system operations, diagnosing deviations in the functioning of a system/organization, and taking necessary steps to correct performance.
- Improving or Designs Systems:** Making suggestions to modify existing systems in order to improve the quality of products or services and developing new or alternative systems.

TECHNOLOGY

- Selecting Technology:** Judging which sets of procedures, tools or machines, including computers and their programs, will produce the desired results.
- Applying Technology to Tasks:** Understanding overall intent and proper procedures for setting up and operating machines, including computers and their reprogramming systems.
- Maintaining and Troubleshooting Equipment:** Preventing, identifying, or solving problems with equipment, including computers and other technologies.

Section III: RELATIONSHIP TO COLLEGE PROGRAMS

1. **THIS COURSE WILL BE AN APPROVED REQUIREMENT FOR AN APPROVED ASSOCIATE DEGREE OR CERTIFICATE PROGRAM:** Yes

- a. If yes, the course will be a **program requirement** portion of the "approved program" listed on the State Chancellor's Inventory of Approved Programs (approved programs can be found on the State Chancellor's Office website at <http://www.laccd.edu/curriculum/resources/proginv.htm>)

Required for AA in Geology (Program ID 10738)

NOTE: In order for a course to be approved as a requirement for an associate degree or certificate program, the program must be listed on the State Chancellor's Office *Inventory of Approved Programs* AND the course must be listed in the college catalog as either a requirement or an elective for the program. If course is not part of an approved program at the college adopting the course, it will be considered to be a "stand-alone" course, and is subject to the State Chancellor's approval criteria. The college must complete and submit the Chancellor's Office "APPLICATION FOR APPROVAL OF CREDIT" form. Certain courses are granted "blanket approval" by the State Chancellor's Office and do not require separate approval. See the Chancellor's Office *Program and Course Approval Handbook* for details. LACCD Skills **Certificates are not State approved programs** and are not listed on the Chancellor's Office *Inventory of Approved Programs*.

2. **GENERAL EDUCATION REQUIREMENTS FOR THE ASSOCIATE DEGREE STATUS:**

- a. Area requested: **a. Natural Science** **Approval** date: before 1990

If applicable, provide an explanation of how the course meets the General Education parameters for one of the five general education areas – *Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education* -- contained in Board Rule 6201.14 -General Education Requirements. http://marlin.laccd.edu/district/BoardRules_AdmRegs/boardrules.htm

- a. 2nd Area requested: **None** **Approval** date:

If applicable, provide an explanation of how the course meets General Education parameters for an additional general education area – *Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education* -- contained in Board Rule 6201.14 - General Education Requirements. http://marlin.laccd.edu/district/BoardRules_AdmRegs/boardrules.htm

Section IV: ARTICULATION INFORMATION

(Complete in consultation with College Articulation Officer)

1. TRANSFER STATUS:

- a. Transferable to the University of California: **Yes** c. Transferable to the California State University: **Yes**
 b. UC **approval** date: before 2000 d. College **approval** date: 1974

2. GENERAL EDUCATION FOR TRANSFER:

IGETC Certification:

- a. Area requested: **5-A: Physical Sciences**
 b. Date requested: 12/99
 c. IGETC **approval** date: Fall 2000

If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in IGETC Certification Guidelines.

CSU Certification:

- a. Area requested: **B-1: Physical Science**
 b. Date requested: 12/99
 c. CSU **approval** date: Fall 2000

If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in CSU Certification Guidelines.

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- a. 2nd Area requested: **None**
 b. Date requested:
 c. IGETC **approval** date:

If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in IGETC Certification Guidelines.

- a. 2nd Area requested: **None**
 b. Date requested:
 c. CSU **approval** date:

If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in CSU Certification Guidelines.

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3. MAJOR REQUIREMENT FOR TRANSFER – Will this course be articulated to meet lower division major requirements? NO List college/university and the majors:

College/University	Major(s)

CAN NUMBER: **CAN SEQUENCE NUMBER:**
 CAN Approval -- Date requested: Date approved:

Section V: SUPPLEMENTAL COURSE INFORMATION

1. **DEPARTMENT/DIVISION NAME:** Natural Sciences, Health, & Physical Education
2. **DEPARTMENT/DIVISION CODE:** 07
3. **SUBJECT CODE** -- 3 characters, assigned by District Office: 460 (existing subject codes are available on the LACCD web site at <http://www.laccd.edu/curriculum/directory-programs-courses/index.htm>)
4. **SUBJECT ABBREVIATION** -- 7 characters, assigned by District Office: GEOLOGY
5. **SPC CODE** -- 3 characters, assigned by District Office:
6. **ABBREVIATION FOR TRANSCRIPTS** -- 20 characters, assigned by District Office: PHYSICAL GEOLOGY LAB
7. **DEGREE CREDIT:** Indicate whether the course meet the "standards for approval" for degree credit course set forth in Title 5, section 55002(a)(2), which requires the course to have a degree of intensity, difficulty, and vocabulary that the curriculum committee has determined to be at the college level :
This courses is Degree Applicable
8. **CREDIT/NO CREDIT GRADING:** No
9. **REPETITIONS** -- Number of times course may be repeated for credit (three maximum): 0

How does the repetition of this course meet Title 5, section 58161 requirements? A course may be repeatable when, "course content differs each time it is offered, and that the student who repeats it is gaining an expanded educational experience for one of the following reasons: (A) Skills or proficiencies are enhanced by supervised repetition and practice within class periods; or (B) Active participatory experience in individual study or group assignments is the basic means by which learning objectives are obtained."

10. **PRIOR TO TRANSFERABLE LEVEL** – This course attribute applies to *English, writing, ESL, reading* and *mathematics* courses ONLY. If applicable, indicate how many levels below the transferable level this course should be placed: Not applicable
11. **CREDIT BASIC SKILLS** -- Title 5, section 55502(d) defines basic skills as "courses in reading, writing, computation, and English as a Second Language, which are designated as non-degree credit courses pursuant to Title 5, section 55002(b)." No If Yes, course must be non-degree applicable.
12. **CROSS REFERENCE** -- Is this course listed as equivalent in content to existing College/District courses in another discipline? No

If Yes, list courses (documentation of cross-discipline agreement must be provided):

13. **COURSE SPECIFICALLY DESIGNED FOR STUDENTS WITH DISABILITIES** -- Title 5, section 56029 allows a course to be repeatble when continuing success of the students with disabilities is dependent on additional repetitions of a specific class. Is this course designated as an "approved special class" for students with disabilities? No

If yes, provide an explanation of how this course meets the requirements of Title 5, section 56029.

14. COOPERATIVE EDUCATION STATUS -- Title 5, section 55252 allows for two types of Cooperative Education: 1) General Work Experience Education -- i.e., supervised employment, which is intended to assist students in acquiring desirable work habits, attitudes and career awareness, which need not be related to the students' educational goals; or 2) Occupational Work Experience Education -- i.e., supervised employment, extending classroom based occupational learning at an on-the-job learning station, which is related to the students' educational or occupational goal. Is this course part of the college's approved cooperative work experience education program? **No**

15. COURSE CLASSIFICATION: **Liberal Arts Sciences**

Note: A course's Classification, TOP Code and SAM code must be aligned – e.g., Courses with an “Occupational” Course Classification must have an “Occupational” TOP Code **and** a SAM Code of A, B, C, or D; courses that do not have an “Occupational” Course Classification cannot have an Occupational TOP Code **and** must have an “E” SAM Code. Courses coded as “basic skills” in #11 should be coded “Adult and Secondary Basic Skills.”

16. TOP CODE – (6 digits XXXX.XX) 1914.00

Course content should match discipline description in Taxonomy of Programs found at www.cccco.edu/cccco/esed/curric/curriculum.htm.

17. SAM CODE (Student Accountability Model): **E – Non-Occupational**

SAM Codes (see CCC Chancellor's Office *Student Accountability Model Operations Manual*, 1984) should be assigned as follows:

Priority “A” – Apprenticeship: Courses designed for an indentured apprentice must have the approval of the State of California, Department of Industrial Relations Department, Division of Apprenticeship Standards.

Priority “B” – Advanced Occupational: Courses taken by students in the advanced stages of their occupational programs. Courses should be offered in one specific occupational area only. Priority letter “B” should be assigned sparingly; in most cases, no more than two courses in any one program should be labeled “B.” “B”-level courses must have Priority “C” prerequisites in the same program area.

Priority “C” – Clearly Occupational: Courses generally taken by students in the middle stages of their programs should have a difficulty level sufficient to detract “drop-ins.” Courses may be offered in several occupational programs within a broad area. The “C” priority, however, should also be used for courses within a specific program area when the criteria for “B” classification are not met. A “C”-level course should provide the student with entry-level job skills.

Priority “D” – Possibly Occupational: “D” courses are those taken by students in the beginning stages of their occupational programs. The “D” priority can also be used for service (or survey) courses for other occupational programs.

Priority « E » – Non-occupational.

SECTION VI: APPROVAL STATUS

1. APPROVAL STATUS:

- | | | |
|--|----------------------------------|------------------------|
| a. <input type="checkbox"/> New Course | . Board Approval Date: | . Effective Semester: |
| b. <input type="checkbox"/> Addition of Existing District Course | . College Approval Date: | . Effective Semester : |
| c. <input type="checkbox"/> Course Change* | . College Approval Date: | . Effective Semester: |
| d. <input checked="" type="checkbox"/> Outline Update | . College Approval Date: 1/13/09 | |

* Changes to a course require the completion of a "Course Change Request" form and approval by the college's Curriculum Committee. In some cases districtwide approval is also required; see, Administrative Regulation E-65, section 3© for details.

SECTION VII: APPROVAL INFORMATION FOR NEW OR ADDED COURSES

(complete in consultation with Department Chair and the appropriate Academic Administrator)

N/A – Existing Course

1. ORIGINATOR:

2. DEPARTMENT:

3. IF THIS IS A NEW COURSE, INDICATE HOW THE COLLEGE PLANS TO MEET THE EXPENSE OF THIS COURSE:

- By additional funds. Describe:

- By deleting courses from the college catalog and course database. List specific courses to be deleted:

- By deleting sections of existing courses. List courses and number of sections to be deleted:

First year: Second year: Third year:

- By rotating sections of existing courses. List courses and number of sections to be rotated, as well as the semesters in which they will be offered:

4. IMPACT -- Will this course directly impact other course offerings and/or associate degree or certificate programs on campus?

No (If yes, briefly explain how)

5. METHOD OF SUPPORT -- Indicate how the college plans to support the proposed course:

Additional staff -- List additional staff needed:

Classroom -- List classroom type needed:

Equipment -- List new equipment needed and indicate funding source for any new equipment:

Supplies- List supplies and indicate dollar value:

Library/Learning Resources- The course initiator shall consult with the College Librarian and review the college library, book, periodical, and electronic resource collections relevant to this course. List additional titles and resources to be considered for purchase as funding permits:

CONTENT REVIEW FOR PREREQUISITE VALIDATION

Target Course & Number, Title: Geology 6, Physical Geology Laboratory
(Course to which pre/corequisite/advisory applies)

Check
Applicable
Box

Prerequisite:

Corequisite: Geology 1, Physical Geology or previous enrollment

Advisory:

- A. **Target Course Entry Skills: Course & Number, Title ; Geology 6, Physical Geology Laboratory**
(For prerequisites/corequisites, list specific skills and/or knowledge necessary for students to succeed in the target class. For advisories, list skills/knowledge which will enrich or deepen the student's knowledge obtained from the course but without which the student may still succeed in the course. Attach additional sheet if necessary. NUMBER EACH SKILL.)

1. Knowledge of the properties of minerals.
2. Knowledge of Igneous rocks.
3. Knowledge of sedimentary rocks.
4. Knowledge of metamorphic rocks.
5. Knowledge of the principles of relative time.
6. Knowledge of the processes and features of shoreline.
7. Knowledge of seismic waves.
8. Knowledge of faults and earthquakes.
9. Knowledge of plate tectonics.

- B. **Exit Skills Provided By Prerequisite/Corequisite/Advisory Course or Assessment:**
Course & Number, Title : Geology 1, Physical Geology

(List specific skills and/or knowledge that are the outcome of the prerequisite/corequisite/advisory course or assessment. For courses already in the curriculum, these should be present in the course objectives in the course outline. Attach additional sheet if necessary. NUMBER EACH SKILL.)

1. Define and recognize properties of a mineral, apply basic chemistry to mineral structure, and recognize mineral groups and their subgroups.
2. Name igneous rocks based on their texture and composition, describe the process by which they form, and relate their formation to plate tectonics.
3. Recognize and describe the three types of volcanoes, volcanic landforms, and describe igneous activity and its relationship to plate tectonics.
4. Describe and recognize different types of mechanical and chemical weathering and relate these processes to the formation of soil types.
5. Describe different groups, formation, and features of detrital and chemical sedimentary rocks.
6. Describe the processes that form metamorphic rocks and recognize the rocks and textural characteristics of regional and contact metamorphic areas.
7. Define mass wasting and describe the controls, triggers, and different types of mass wasting events.
8. Describe the hydrologic cycle and processes of erosion and deposition, discuss the controls of stream flow, and recognize landforms associated with streams and stream actions.
9. Discuss the importance of groundwater and concepts important to the study of groundwater, such as movement of groundwater and how it relates to springs and wells and associated environmental issues.
10. Discuss the formation and movement of glacial ice, compare and contrast the types of glaciers, and relate glacial cycles to climate change.
11. Describe the distribution and causes of dry lands and recognize landforms created by wind erosion.
12. Discuss the formation and characteristics of ocean waves and how shoreline features are formed.
13. Examine the ocean floor with its continental margins, deep ocean basins, sediment types and relationship to plate tectonics.
14. Describe earthquakes and earthquake waves and how they can be measured, predicted, and located.
15. Discuss plate tectonics and continental drift and evaluate evidence supporting plate tectonics.
16. Define rock deformation and relate faulting and plate tectonics to mountain building.
17. Discuss the geologic time scale and evaluate principles and evidence used to construct relative dating sequences.
18. Choose some highlights of the last 4.5 billion years of Earth's history

LOS ANGELES COMMUNITY COLLEGE DISTRICT COURSE STANDARDS AND CRITERIA

Subject: **Geology** Number: **6** Course Title: **Physical Geology Laboratory**

Using the Official Course Outline, please determine whether or not the above listed credit course meets the following standards and criteria required in Title V, Part VI of the California Administrative Code, and which has been designated as appropriate to the Associate Degree. Place a (X) in the appropriate box.

<u>STANDARDS FOR APPROVAL</u> Section 55002	<u>RATING CRITERION</u>	
	MET	NOT MET
<u>Grading Policy:</u> The course provides for measurement of student performance in terms of the stated course objectives and culminates in a formal, permanently recorded grade based upon uniform standards in accordance with section 55023. The grade is based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays, or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students.	X	
<u>Units:</u> The course grants units of credit based upon a relationship specified by the governing board between the number of units assigned to the course and the number of lecture and/or laboratory hours or performance criteria specified in the course outline. The course also requires a minimum of three hours of student work per week, including class time for each unit of credit, prorated for short-term, extended term, laboratory and/or activity courses.	X	
<u>Intensity:</u> The course treats subject matter with a scope and intensity that requires students to study independently outside of class time.	X	
<u>Prerequisites and Corequisites:</u> When the college and/or district curriculum committee determines, based on a review of the course outline of record, that a student would be highly unlikely to receive a satisfactory grade unless the student has knowledge or skills not taught in the course, then the course shall require prerequisites or corequisites that are established, reviewed, and applied in accordance with the requirements of this article.	X	
<u>Basic Skills Requirements:</u> If success in the course is dependent upon communication or computation skills, then the course shall require, consistent with the provisions of this article, as prerequisites or corequisites eligibility for enrollment in associate degree credit courses in English and/or mathematics, respectively.	X	
<u>Difficulty:</u> The course work calls for critical thinking and the understanding and application of concepts determined by the curriculum committee to be at college level.	X	
<u>Level:</u> The course requires learning skills and a vocabulary that the curriculum committee deems appropriate for a college course.	X	
<u>Course Outline of Record:</u> The course is described in a course outline of record that shall be maintained in the official college files and made available to each instructor. The course outline of record shall specify the unit value, the expected number of contact hours for the course as a whole, the prerequisites, corequisites or advisories on recommended preparation (if any) for the course, the catalog description, objectives, and content in terms of a specific body of knowledge. The course outline shall also specify types or provide examples of required reading and writing assignments, other outside-of-class assignments, instructional methodology, and methods of evaluation for determining whether the stated objectives have been met by students.	X	
<u>Conduct of Course:</u> Each section of the course is to be taught by a qualified instructor in accordance with a set of objectives and with other specifications defined in the course outline of record.	X	
<u>Repetition:</u> Repeated enrollment is allowed only in accordance with provisions of sections 51002, 55040-55043 and 58161.	X	

Title5Assurances, DegreeApplicable, 1007

CERTIFICATION AND RECOMMENDATION

This course meets Title 5 requirements for Associate Degree applicable college credit towards an Associate of Arts Degree.

This course meets Title 5 requirements but does not satisfy the requirements for an Associate Degree applicable course.

We certify that the information and answers above properly represent this course.

Glenn Yoshida and Paul Doose

Originator

01/12/2009

Date

Glenn Yoshida

Department/Cluster Chairperson

01/12/2009

Date

Linda Larson Singer

Articulation Officer

01/13/2009

Date

Gabrielle Arvig for Shelley Werts

Librarian

01/12/2009

Date

Earnestine Thomas-Robertson

Dean (if applicable)

02/09/2009

Date

Linda Larson-Singer

Curriculum Committee Chairperson

01/13/2009

Date

Alfred Reed Jr.

Academic Senate President

01/14/2009

Date

Leige Doffoney

Vice President, Academic Affairs

02/09/2009

Date

Jack E. Daniels

College President

02/09/2009

Date