

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA

ACADEMIC SENATE

GENERAL EDUCATION COMMITTEE

REPORT TO

THE ACADEMIC SENATE

GE-073-156

GSC 1010A – Planet Earth: A Citizen’s Guide Activity (GE Area E)

General Education Committee

Date: 06/29/2016

Executive Committee  
Received and Forwarded

Date: 08/17/2016

Academic Senate

Date: 08/31/2016  
First Reading

09/28/2016  
Second Reading

**BACKGROUND:**

This is a revised course. Under the quarter system it is known as GSC 101A (1-unit activity), and it currently has GE status.

**RESOURCES CONSULTED:**

Faculty  
Department Chairs  
Associate Deans  
Deans  
Office of Academic Programs

**DISCUSSION:**

The GE Committee reviewed the ECO for this course and found it to satisfy the GE Student Learning Outcomes and other requirements for GE Area E.

**RECOMMENDATION:**

The GE Committee recommends approval of GE-073-156, GSC 1010A – Planet Earth: A Citizen’s Guide Activity for GE Area E.

## GSC - 1010A - Planet Earth: A Citizen’s Guide Activity

C. Course - New General Education\* Updated

### General Catalog Information

<b>Department*</b> Geological Sciences	
<b>Semester Subject Area*</b> GSC	<b>Semester Catalog Number*</b> 1010A
<b>Quarter Subject Area</b> GSC	<b>Quarter Catalog Number</b> 101A
<b>Course Title*</b> Planet Earth: A Citizen’s Guide Activity	
<b>Units*</b> (2)	
<b>C/S Classification*</b> C-07 (Activity)	

To view C/S Classification Long Description click: [http://www.cpp.edu/~academic-programs/scheduling/Documents/Curriculum%20Guide/Appendix\\_C\\_CS\\_Classification.pdf](http://www.cpp.edu/~academic-programs/scheduling/Documents/Curriculum%20Guide/Appendix_C_CS_Classification.pdf)

<b>Component*</b> Activity
<b>Instruction Mode*</b> Face-to-Face
<b>Grading Basis*</b> Graded Only
<b>Repeat Basis*</b> May be taken only once

<b>If it may be taken multiple times, limit on number of enrollments</b>	<b>1</b>
<b>Cross Listed Course Subject Area and Catalog Nbr (if offered with another department)</b>	
<b>Dual Listed Course Subject Area and Catalog number (If offered as lower/upper division or ugrd/grad)</b>	
<b>Choose appropriate type (s) of course(s)*</b>	<input checked="" type="checkbox"/> Major Course <input type="checkbox"/> Service Course <input checked="" type="checkbox"/> GE Course <input type="checkbox"/> None of the above
<b>General Education Area / Subarea*</b>	<b>E</b>

To view the General Education SubArea definitions, click <http://www.cpp.edu/~academic-programs/scheduling/Documents/Ch.3-GeneralEducationProposals.pdf>.

**I. Catalog Description**

<b>Catalog Description</b>	<p>Activities directed toward educating regional or campus communities about response to / recovery from challenges posed by Earth's environment. Enhancement of skills to evaluate such challenges, engage in related conversations, and promote community awareness. Participation in events such as Earth Day, California Shake-Out, and disaster preparedness drills. Promotion of water conservation and waste recycling. Outdoor field trips.</p>
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**II. Required Coursework and Background**

<b>Prerequisite(s)</b>	
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<p><b>Corequisite(s)</b>      GSC 1010</p>
<p><b>Pre or Corequisite (s)</b></p>
<p><b>Concurrent</b></p>

**III. Expected Outcomes**

<p><b>List the knowledge, skills, or abilities which students should possess upon completing the course.*</b></p>	<p>Upon successful completion of this course, students will be able to:</p> <ol style="list-style-type: none"> <li>1. Participate in field trips to acquire experience and perspective on global issues such as climate change, environmental sustainability, natural resource management, and preparation for/mitigation of natural hazards.</li> <li>2. Appreciate through active learning the physical, mental, emotional-</li> </ol>
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psychological, intellectual, spiritual, financial, social, and environmental factors involved with global sustainability issues.

3. Promote community efforts to encourage citizens to make well-informed, responsible decisions on global sustainability and natural hazards.

4. Engage in activities to encourage Earth stewardship through balanced dissemination of knowledge on global sustainability issues.

**If this is a course for the major, describe how these outcomes relate to the mission, goals and objectives of the major program.**

Outcomes of this course will build student capacity in each of the following areas as defined by program objectives and student learning outcomes for the Geology Bachelor of Science degree program.

PSLO -2. Effectively communicate results of scientific investigations in written and oral format.

PSLO -4. Acquire geologic data in the laboratory or field using standard observational procedures and scientific equipment.

PSLO -5. Develop skills needed to function effectively and efficiently in the field.

PSLO -7. Utilize quantitative reasoning, experiential judgment, and computer technology to assess data, draw conclusions, and solve problems.

**Explain how the course meets the description of the GE SubArea(s). Please select appropriate outcomes according to the GE Area/SLO mapping.**

This course provides students skills for lifelong learning and self-development as responsible citizens of Planet Earth. Earth science issues such as global climate change, environmental sustainability, water and energy resource management, and natural hazards provide context for exploring psychological, social, financial, physical and environmental impacts. An underlying theme is promotion of Earth stewardship with the general goal of building and maintaining a habitable Earth.

**Describe how these outcomes relate to the associated GE Learning Outcomes listed below.\***

1a) Write effectively for various audiences.

Students will use written words to describe issues of relevance to sustaining a habitable Earth. Assigned paper reports require a written summary statement describing key points of the reading. Field trip reports require documentation of site visits in written words. (See also Course SLOs 1, and 4 above and discussion of meaningful writing component in Part IX below)

4a) Analyze the factors that contribute to individual well-being (such as physical, mental, nutritional, emotional, intellectual, spiritual, financial, social, or environmental).

The well-being of Earth's inhabitants is generally controlled by the global environment in which they live. Through experiential learning and intellectual discussion of global sustainability issues, this course focuses on emotional-psychological, social, financial, physical and environmental impacts of efforts made to achieve sustainability. (See also Course SLO 2 above)

4b) Demonstrate activities, techniques, or behaviors that promote intellectual or

cultural growth.

Through participation in classroom discussions and engagement in field work, students model activities, techniques, and/or behaviors related to Earth stewardship that ultimately promote intellectual or cultural growth of Earth's citizens. (See also Course SLOs 3 and 4 above)

4c) Engage in communities (campus, regional, etc.) or participate in civic activities for the betterment of personal and public life.

An underlying theme of this course is promotion of Earth stewardship with the general goal of building and maintaining a habitable Earth. Education of the campus and regional community with regard to global sustainability issues is accomplished through responsible civic engagement. For example field work activities, might include participation in the 'Great California Shakeout,' promotion of Earth Day events, disaster preparedness drills, voter registration drives, demonstrations of groundwater flow models. (See also Course SLO 4 above)

**General Education Outcomes\***

**Ia. Write effectively for various audiences**

**IVa. Analyze the factors that contribute to individual well-being (such as physical, mental, nutritional, emotional, intellectual, spiritual, financial, social, or environmental)**

**IVb. Demonstrate activities, techniques, or behaviors that promote intellectual or cultural growth.**

**IVc. Engage in communities (campus, regional, etc.) or participate in civic activities for the betterment of personal and public life.**

To view the mapping, click <https://www.cpp.edu/~academic-programs/Documents/GE%20SLO%20Mapping.pdf>

#### **IV. Instructional Materials**

Provide bibliography that includes texts that may be used as the primary source for instruction, and other appropriate reference materials to be used in instruction. The reference list should be current, arranged alphabetically by author and the materials should be listed in accepted bibliographic form.

**Instructional Materials\***

Primary Texts may vary with instructor and over time. Examples of possible texts and articles are listed below:

1. Hyndman, Donald and Hyndman, David, 2012, *Natural Hazards and Disasters* (4<sup>th</sup> Edition); Brooks/Cole Publishing Co, 555 p.
2. Rozzi, R., Chapin, F. Stuart, Callicott, J. Baird, Pickett, S.T.A. Power, Mary E., Armesto, Juan J. (Editors), 2015, *Earth Stewardship: Linking Ecology and Ethics in Theory and Practice*, Springer, 457 p.
3. *Earth Stewardship: science for action to sustain the human-earth system*, Chapin et al. 2011, Ecosphere
4. *Earth Stewardship: A Strategy for Social-Ecological Transformation to Reverse Planetary Degradation*, Chapin et al. 2011, Journal of Environmental

Studies and Sciences

Additional Primary instructional resources include the web sites listed below:

<http://www.earthstewardshipesa2014.com/> Earth Stewardship Initiative

<http://www.stewards-earth.org/> Stewards of the Earth

<http://www.esa.org/esa/science/earth-stewardship/> Ecological Society of

America Earth Stewardship site

<http://www.earthstewards.org/> Earthstewards Network, nonprofit international organization devoted to bringing positive change to our planet through the grassroots efforts of people

Secondary resources might include:

1. Carey, Stephen S., 2011, *A Beginners Guide to the Scientific Method*, 4<sup>th</sup> edition, Wadsworth, Inc.,
  2. Rawles, J. W., 2009, *How to Survive the End of the World as We Know It: Tactics, Techniques, and Technologies for Uncertain Times*, Plume Press, 336 p.
  3. Willers, W. B., 1991, *Learning to Listen to the Land*, Island Press, 295 p.
  4. Friedmen, W., 2008, *Hot, Flat, and Crowded: Why We Need a Green Revolution and How it Can Renew America*, Farrar, Strauss, and Giroux, 438 p.
- Lectures, lecture notes, homework assignments, and current papers on the diverse topics will also be made available on BlackBoard\* by the instructor.

Faculty are encouraged to make all materials accessible. Indicate with an asterisk those items that have had accessibility (ATI/Section 508) reviewed. For more information, <http://www.cpp.edu/~accessibility>

## **V. Minimum Student Material**

List any materials, supplies, equipment, etc., which students must provide, such as notebooks, computers, internet access, special clothing or uniforms, safety equipment, lockers, sports equipment, etc. Note that materials that require the assessment of a fee may not be included unless the fee has been approved according to University procedures.

### **Minimum Student Material\***

Notebook  
 Graph paper  
 Transportation to off campus learning sites  
 Standard writing materials  
 Computer  
 Internet service  
 E-mail  
 Printer  
 Cell phone  
 Calculator

## **VI. Minimum College Facilities**

List the university facilities/equipment that will be required in order to offer this class, such as gymnastic equipment, special classroom, technological equipment, laboratories, etc.

### **Minimum College Facilities\***

#### **External Support**

Library Services  
 Information Technology (IT) Services  
 Classroom Management System (e.g. BB)  
 Copier  
 Scanner

#### **Physical Space & Major Equipment**

Lecture room with seating for 40 students  
 Smart classroom (computer/projector)  
 Overhead screen  
 White board/dry erase markers  
 Adjustable lighting

## **VII. Course Outline**

Describe specifically what will be included in the course content. This should not be a repetition of the course description but an expansion that provides information on specific material to be included in the class, e.g. lecture topics, skills to be taught, etc. This should not be a week-by-week guide unless all instructors are expected to follow that schedule.

### **Course Outline\***

The following list is a representative sample of the topics that may be discussed during the class meetings:

- Course logistics and introduction to the global sustainability concepts
- The Earth system: linkages between humans and the lithosphere, hydrosphere, biosphere, atmosphere
- Being an informed citizen: distinction between science, pseudoscience, and rhetoric
- Strategies for building and maintaining a habitable Earth
- Strategies for promoting community awareness
- Disaster preparedness drills
- Earth Day activity
- California Shake-Out activity
- Voter registration drives

- Field trip to water conservation facility
- Field trip to recycling facilities on and off campus
- Field trip to sustainable agriculture site
- Campus field trip to Lyle Center of Regenerative studies
- Student presentations and discussion of assigned readings
- Guest lectures

### **VIII. Instructional Methods**

**Describe the type(s) of method(s) that are required or recommended for the instruction of this course (lectures, demonstrations, etc.). Include any method that is essential to the course, such as the use of particular tools or software.**

**Instructional  
Methods\***

Lecture

Problem-solving

Discussion

Individual instruction

Small group activities

Peer instruction

Creating and presenting a talk/speech

Laboratory exercises/hands on practice

Demonstrations

Invited speakers

Review, evaluation, critique

Project (by individual, group, and/or class)

Study groups

Field studies

Case studies

Simulations

Observation

Inquiry-based learning

Project-based learning

Assigned readings (textbook, journals, etc.)

Outlining (readings, papers, activities, etc.)

## IX. Evaluation of Outcomes

**Describe the methods to be used to evaluate students' learning, i.e. written exams, term papers, projects, participation, quizzes, attendance, etc.\***

Students' learning of course content is evaluated **via classroom/group activities, summaries of assigned readings, field work, and field trips.**

Suggested weighting in grade calculations is 20% activities, 30% reading summaries, 30% field work, 20% field trips. Classroom activities are graded on basis of level of participation and attendance; the other evaluation methods will be scored using standard numerical methods and/or rubrics. Instructor will provide verbal commentary during classroom discussions and student presentations, and may provide written suggestions on submitted work products.

**Classroom Activities** involve whole class or small group discussions of environmental or Earth sustainability issues. These discussions may follow special guest lectures or student presentations of reading summaries. Learning gain will occur through interactions between students, peers and instructor.

**Assigned Readings.** Teams of 2-3 students are assigned readings from textbooks or articles. Topics include selected aspects of global climate change, environmental sustainability, water and energy resource management, or natural hazards. An oral report to the class will serve as basis for discussion on related psychological-emotional, social, financial, physical and environmental impacts or the general class theme of building and maintaining a habitable Earth. Written summaries will be submitted after each presentation

**Field Work.** Student will directly engage with the campus community on issues of global sustainability, water and energy resource management, or natural

hazards preparation and mitigation. Depending on which semester, activities might include participation in the 'Great California Shakeout,' promotion of Earth Day events, disaster preparedness drills, voter registration drives, demonstrations of groundwater flow models. Each activity requires an oral report to the class that reflects on lessons learned while educating the public.

**Field trips.** Students or teams of students will attend field trips to on-campus or locally accessible off campus sites that might include the BioTrek Rain Forest, Cal Poly Pomona's water recycling system, the Cal Poly Farm, Chino Basin Water Conservation District, local recycling centers, flood control dams, water storage reservoirs, groundwater spreading grounds, or local sanitary landfills. Field trip reports require a written summary, to be evaluated by instructor.

**Describe the meaningful writing assignments to be included.\***

Students will have several opportunities to demonstrate effective writing, with feedback provided through instructor comments. Each reading assignment requires a written synopsis describing key points of the article or book chapter. Field trip reports require a written summary, to be evaluated by instructor, with comments/corrections returned to students. The second field trip report will be submitted after the first is evaluated by the instructor. This process enables students to use the feedback to improve their technical writing and aids instructor assessment of student improvement and knowledge gained.

**Discuss how these methods may be used to address the course and program outcomes, as appropriate. Include or attach a matrix to align the evaluation methods to the outcomes.\***

Student Learning Outcome (see detailed list in Part III above)	Methods of Assessment			
	Field Work	Field Trip Reports	Reading Summaries	Classroom Activities
#1: Participate in field trips to acquire experience and perspective on global issues such as climate change, environmental sustainability, natural resource management, and preparation for/mitigation of natural hazards.	X		X	
#2: Appreciate through active learning the physical, mental, emotional- psychological, intellectual, spiritual, financial, social, and environmental factors involved with global sustainability issues.	X	X	X	X

<p><b>#3: Promote community efforts to encourage citizens to make well-informed, responsible decisions on global sustainability and natural hazards.</b></p>		X	X	X
<p><b>#4: Engage in activities to encourage Earth stewardship through balanced dissemination of knowledge on global sustainability issues.</b></p>		X		X

**If this is a general education course, discuss how these methods may be used to address the associated GE Learning Outcomes listed below. Include or attach a matrix to align the evaluation methods to the outcomes.\***

Methods of Assessment				
GE Learning Outcome (see Part III above)	Field Work	Field Trip Reports	Reading Summaries	Classroom Activities
<p><b>#1a: Write effectively for various audiences</b></p>	X	X	X	

<p><b>#4a) Analyze the factors that contribute to individual well-being</b></p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>
<p><b>#4b) Demonstrate activities, techniques, or behaviors that promote intellectual or cultural growth.</b></p>			<p>X</p>	<p>X</p>
<p><b>#4c) Engage in communities or participate in civic activities for the betterment of personal and public life.</b></p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>

**X. This OPTIONAL Section is for describing Course/Department/College specific requirements.**