

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA

ACADEMIC SENATE

GENERAL EDUCATION COMMITTEE

REPORT TO

THE ACADEMIC SENATE

GE-008-189

GSC 1010-Planet Earth: A Citizen's Guide (GE Area E)

General Education Committee

Date: 02/14/2019

Executive Committee  
Received and Forwarded

Date: 02/20/2019

Academic Senate

Date: 02/27/2019  
First Reading  
03/27/2019  
Second Reading

TITLE OF REFERRAL: GSC 1010-Planet Earth: A Citizen’s Guide (GE Area E)

BACKGROUND:

This is a General Education course already approved for Area E. It is being modified by increasing the lecture content and decreasing activity so that the ratio becomes 2 units lecture and 1 unit activity.

RESOURCES CONSULTED:

Office of Academic Programs

Jon Nourse

DISCUSSION:

The changed structure of 2 units lecture and 1 unit activity did not change its GE qualifications. Nonetheless, the GE Committee also 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 GSC 1010 – Planet Earth: A Citizen’s Guide for GE Area E.

Curriculog printout provided for reference only. For most recent changes please refer to Curriculog database (<https://cpp.curriculog.com/>).

## GSC - 1010 - Planet Earth: A Citizen's Guide

### C. Course - New/Modify General Education

#### General Catalog Information

Department\*

Geological Sciences

Proposal Type\*

New GE Course

Modify GE Course

**Modification Summary** Increase lecture units from 1 to 2, with coinciding decrease in co-requisite activity units from 2 to 1.

Lecture content will be increased by:

1. shifting Guest Lectures and Student Summaries of Assigned readings from GSC 1010A to co-requisite GSC 1010;
2. Addition of a new topic Transportation: public transit systems; alternatives to fossil-fueled vehicles; reduction of emissions;
3. Bolstering of content under topic of Water Resources: location, development, preservation, and management issues; water conservation
4. Bolstering of content under topic of Global Food Supply: preservation of soils and sustainable agriculture; issues of genetically modified crops

Establish or Modify Articulation Agreement\*

Yes

No

Subject Area\*

GSC

Catalog Number\* 1010

**Formal Course Title\*** Planet Earth: A Citizen's Guide

**Abbreviated Course Title\*** Planet Earth A Citizen's Guide

Unit(s)\*

(2)

C/S Classification

\*

C-02 (Lecture Discussion)

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>	Lecture
<b>Contact Hour(s)</b>	
<b>Instruction Mode(s)*</b>	Face-to-Face    Hybrid w/Asynchronous Component
<b>Grading Basis*</b>	Graded Only
<b>Repeat for Credit*</b>	May be taken only once
<b>Repeat for Credit Limit</b>	
<b>If course may be repeated for credit, total units applicable to degree and max units per semester.</b>	
<b>When Offered</b>	
<b>Cross Listed Course Subject Area and Catalog Nbr</b>	
<b>Dual Listed Course Subject Area and Catalog Nbr</b>	
<b>Course Category (select all that apply)*</b>	<input checked="" type="checkbox"/> Major Course <input type="checkbox"/> Service Course (used in other programs) <input checked="" type="checkbox"/> GE Course <input type="checkbox"/> None of the above
<b>GE Area/Subarea*</b>	E

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

**I. Catalog Description**

**Catalog Description\*** Development of knowledge pertinent to Earth stewardship and global citizenship, with emphasis on building and maintaining a habitable earth.

Survey of issues such as climate change, environmental and natural hazards, water resource development and conservation, and/or environmental sustainability, with their social, emotional, financial, psychological, and physiological impacts. Course fulfills GE area E.

**II. Required Coursework and Background (i.e. Enrollment Requirements)**

**Prerequisite(s)**  
(leave blank if none)

**Corequisite(s)** GSC 1010A.  
(leave blank if none)

**Pre or Corequisite(s)**  
(leave blank if none)

**Concurrent** (leave blank if none)

**III. Course Note(s) (OPTIONAL)**

**Note(s)**

**IV. Expected Outcomes**

**List the knowledge, skills, or abilities which students should possess upon completing the course.\***

Upon successful completion of this course, students will be able to:

1. Describe the general context and scientific basis for global issues such as climate change, environmental sustainability, natural resource management, and preparation for/mitigation of natural hazards.
2. Analyze the physical, mental, emotional-psychological, intellectual, spiritual, financial, social, and environmental factors involved with global sustainability issues.
3. Develop a well-informed, balanced perspective on global sustainability to address such issues as a responsible citizen.
4. Promote activities that 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-1. Recognize and implement various facets of the scientific method.

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

and oral format.

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.\***

These are the Expected SLOs for the selected GE subarea(s):

1a) Write effectively for various audiences.

Students will use written words to describe issues of relevance to sustaining a habitable Earth. Homework assignments require a short written summary statement describing the work submitted. Quizzes contain short answer and/or essay questions that require students to describe their knowledge of specific course content in written words. (See also Course SLOs 1, 2, and 3 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 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 guest lectures and evaluation/discussion of assigned readings and movies / videos this course emphasizes 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. (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>

## **V. 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>

## **VI. Minimum Student Materials**

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 Materials\***

Access to:

Computer

Internet service



e-mail

notebook

graph paper

printer

cell phone

transportation to off campus learning sites

Standard writing materials

calculator

## **VII. 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 50 students

smart classroom (computer/projector)

overhead screen

white board/dry erase markers

adjustable lighting

## **VIII. 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:**

1. Course logistics and introduction to the global sustainability concepts
2. The Earth system: linkages between humans and the lithosphere, hydrosphere, biosphere, atmosphere
3. Natural disasters-Causes and occurrences
4. Preparation for and mitigation of natural disasters: related psychological, social, cultural, and financial impacts
5. The science behind global climate change
6. Population dynamics and strained global resources (food, water, energy)
7. Global Food Supply: Preservation of soils and sustainable agriculture; issues related to genetically modified crops
8. Water Resources: location, development, preservation, and management issues; water conservation
9. Conventional vs. alternative energy resources: related economics and politics
10. Recycling efforts: history and recent advances
11. Transportation: public transit systems, alternatives to fossil-fueled vehicles; reduction of vehicle emissions
12. Promoting and maintaining a habitable Earth; Importance of a well-informed community
13. The politics and economics of global sustainability
14. Guest Lectures
15. Student presentations and discussion of assigned readings

**IX. 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

field studies

case studies

individual instruction

small group activities

peer instruction

creating and presenting a talk/speech

simulations

observation

inquiry-based learning

project-based learning

assigned readings (textbook, journals, etc.)

outlining (readings, papers, activities, etc.)

demonstrations

invited speakers

review, evaluation, critique

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

study groups

**X. Evaluation of Outcomes**

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

Students' learning of course content is evaluated **via classroom/group activities, summaries of assigned readings, special lecture evaluations, and quizzes**. Suggested weighting in grade calculations is 15% activities, 25% reading summaries, 30% lecture evaluations, 30% quizzes. Classroom activities will be graded on the basis of level of participation and attendance; the other evaluation methods will be scored using standard numerical methods and/or

**quizzes, attendance, etc.\***

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

**Evaluation of Special Lectures.** Each student must attend three special lectures during the course of the term on a topics related to global climate change, environmental sustainability, water and energy resource management, or natural hazards. A written synopsis of key points presented, as well as an evaluation of the speaker shall be submitted after each lecture

**Quizzes** are structured written assignments with a time limit that require students to demonstrate the knowledge gained in class to describe and explain environmental processes or discuss the pros and cons of Earth sustainability issues. Types of questions may include short essays, multiple choice, match-up, short answer, label drawings or diagrams, calculations, an illustrate environmental processes or features with drawings. At least one quiz question will require a written response and will be repeated later in the term to assess student improvement and knowledge gained.

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

Students will have multiple 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. Quizzes contain short answer and/or essay questions that require students to describe their knowledge of specific course content in written words. At least one quiz question will require a written response to be evaluated by the instructor, and repeated later in the term to assess student improvement and knowledge gained. This process also enables students to use the feedback to improve their technical writing.

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

Below is a Matrix indicating how assessment methods align to course learning outcomes.

	<b>Methods of Assessment</b>
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**a matrix to align the evaluation methods to the outcomes.\***

Student Learning Outcome (see detailed list in Part III above)				
	Quizzes	Special Lecture Evaluations	Reading Summaries	Classroom Activities
<b>#1: Describe the general context and scientific basis for global issues such as climate change, environmental sustainability, natural resource management, and preparation for/mitigation of natural hazards.</b>	X		X	
<b>#2: Analyze the physical, mental, emotional-psychological, intellectual, spiritual, financial, social, and environmental factors involved with global sustainability issues.</b>	X	X	X	X
<b>#3: Develop a well-informed, balanced perspective on global sustainability to address such issues as a responsible citizen.</b>		X	X	X
<b>#4: Promote activities that encourage Earth stewardship through balanced dissemination of knowledge on global sustainability issues.</b>		X		X

**If this is a general education course, discuss how these methods may be used to address the associated GE Learning**

Below is a matrix indicating how assessment methods evaluate the GE learning outcomes:

	<b>Methods of Assessment</b>
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**Outcomes listed below. Include or attach a matrix to align the evaluation methods to the outcomes.\***

<b>GE Learning Outcome (see Part III above)</b>	<b>Quizzes</b>	<b>Special Lecture Evaluations</b>	<b>Reading Summaries</b>	<b>Classroom Activities</b>
<b>#1a: Write effectively for various audiences</b>	X	X	X	
<b>#4a) Analyze the factors that contribute to individual well-being</b>	X	X	X	X
<b>#4b) Demonstrate activities, techniques, or behaviors that promote intellectual or cultural growth.</b>			X	X
<b>#4c) Engage in communities or participate in civic activities for the betterment of personal and public life.</b>	X	X	X	X

**XI. Course/Department/College Specific Requirements (OPTIONAL)**

**Department/  
College Required  
ECO Information  
(Optional)**      N/A

**FOR OFFICE OF ACADEMIC PROGRAMS USE ONLY**

**AY Proposal Submitted** 2018-2019

**AY Proposal Implemented**

**PS Academic Group** 75-CSCI

**PS Academic Organization** 308-GSC

**Course Type** Geological Sciences

**Impact Report (for modified courses only)**  Attached

**FOR ACADEMIC SENATE OFFICE USE ONLY**

**Senate Referral Number** GE-008-189

**Senate Report Number**