

See program review website for detailed timeline and relevant request forms:  
<https://research.gwc.cccd.edu/oir/progreview/2013/index.html>

# **Golden West College**

## **INSTRUCTIONAL**

### **PROGRAM REVIEW**

#### **Spring 2012**

**Program Name: Environmental Studies**

**Division Name: Career and Technical Education**

**Overview of Program:** The Environmental Studies program is a comprehensive program which includes Environmental Science, Photovoltaic Systems, Solar Thermal Systems, Energy Efficiency and Renewable Energy systems.

#### **Program Contact Information:**

Program Contact Name	Phone #	E-mail prefix
Tom Hersh	Phone # 895-8224	E-mail prefix <a href="mailto:thersh@gwc.cccd.edu">thersh@gwc.cccd.edu</a>

Program Manager	Title	Salary Sched/Column	Phone #	Office Location	E-mail prefix
Sample Mgr Name	Dean	D-32	x58727	Bus 202	smgrname

Classified Staff	Title	Salary Sched/Column	Phone #	Office Location	E-mail prefix
------------------	-------	---------------------	---------	-----------------	---------------

Full-Time Faculty	Phone #	Office Location	E-mail
Tom Hersh			

#### **Current State of the Program**

##### **1. What noteworthy trends do you notice in your data tables?**

The trends in the data tables are very difficult to understand. They include, it appears, the data for the Recycling and Resource Management program which is on its last semester of offering. Many of the sections of that program were canceled and led to the low figures shown in the data tables. The fill rates in all other ES sections do not show that the number in the tables is an accurate reflection of the true much larger fill rate of ES 100, ES133, ES 160, ES 162, or ES 170. ES 190 was canceled for 3 semesters in a row and perhaps that is part of the negative data in the tables?

##### **2. What are your analyses of the causes or reasons for those trends?**

The ES and Engineering Technology (ET) program were integrated into essentially one program by the faculty as a result of the PVR process. For the past 3 years the program has had no support. There was a purchase of laboratory benches 3 years ago for the program and was only partially assembled. The benches and the parts that need to be assembled are in Tech 212 in disarray. Maintenance and Operations left the top of the benches unassembled in the back of the room and that is where they are still. There has been no effort to complete them in spite of requests by faculty to the previous CTE administration to do so. Students coming into the room see a room that is in disarray and are discouraged because of a lack of an adequate laboratory facility. There are other materials for the program that are in storage in different parts of the campus. There is no adequate "home" facility for the program.

Certificates for the program have not been able to be issued as a result of previous CTE administration prematurely cancelling the ES 190 section for 3 semesters. Students cannot obtain their certificates without this course. This 2013 Spring semester had about 12 completers and will allow about that many certificates to be issued this year.

### **3. What does your program do well?**

This program is one of the few of its kind in the country. The program is led by an experienced instructor certified by Building Performance Institute and master teacher at the National Renewable Energy Laboratory (NREL) as well as having a C-46 contractor's license. The underlying philosophy of the program is stewardship, conservation and restoration of the environment and ecosystems of the planet. The program is an approved Electronics Training Agency (ETA). The program consists of a comprehensive solar energy and renewable energy and energy efficiency program. The program is continuously improving to meet the constantly changing market place for renewable energy and energy efficiency professionals. The program is enjoying continued growth in attendees with high student persistence. The instructor has obtained several grants to support the program and continues to actively seek resources to keep the program current and viable. The program maintains strong relationships with industry partners, such as Ballsells, Ricoh electronics, and Power Progressive Group Solar Industries. Students have internship opportunities throughout the community, such as Rainbow Disposal, Amigos de Bolsa Chica, and Long Beach Aquarium. The program has a strong student club on campus: the Environmental Sustainability Association. The students are actively engaged in environmental community organizations, such as the Norma Brandell Gibbs Park (Huntington Beach), CoastKeepers, and several environmental parks within the community.

### **4. What are the challenges to your program.**

Within your program's control:

Better integrate ET 100 within the Environmental Studies Program by working on setting up the wind turbine (need 30' tower) within the classroom, but would have to modify the equipment to accommodate the classroom's space limitations.

Beyond your program's control:

Allocation of space for a general laboratory for environmental studies, where the equipment can be set up properly. Solar cells should be out in the sunlight. The wind turbine is not being utilized due to space limitations on campus. Classroom space is inadequate for utilizing the equipment that exists, but has not been used adequately. On-going funding for instructional materials is a necessary component to support program goals and objectives. Currently, there is no budget for the program.

### **5. What are the opportunities for your program**

There are many opportunities for the program to grow. Students have the opportunity to work with community partners, such as Grid Alternatives (installation arm of Habitat for Humanity) to install solar and renewable energy equipment to income-qualified community members. Students gain real-world experience that teaches them skills that will transfer into their future jobs.

We are an ETA qualified program, but we would like to advance our capability to an ETA green academy, which would provide prestige for the program and additional advertising for the program. It

would also provide third-party certifications for our students. In order to qualify to be a green academy, we would have to meet the facility standards, as set by the ETA. These include adequate facilities for training, appropriate equipment, and instructor credentials.

#### **6. Identified areas in need of improvement**

Proper facility for program. On-going funding for the program. More complete energy efficiency equipment such as a Pressure House, gas analyzers, gas detectors, more funding for conferences and certifications for instructors to continue to obtain credibility of the program.

**Program-Level Student Learning Outcomes (pSLOs) Assessed During 2010-12***Complete a separate page for each major and/or certificate you assessed.*

Program Name: Environmental Studies Semester  Fall  Spring  
 Program Type:  Transfer Major Assessed:  Winter  Summer  
 Certificate of Achievement  
 Basic Skills Sequence  
 Area of Emphasis  
 Gen Ed Area

Year:  
2013

Step 1	Define the Expected Program Student Learning Outcome (pSLO).	1. To compare and evaluate the various career paths available in the environmental studies field
Step 2	What method did you use to assess the SLO?	Offered the ES 190 course spring semester 2013.
Step 3	Describe the results of your assessment.	12 students completed at least 63 hours (some did 89 hours) of internship within the environmental studies field. All 12 students completed a report that showed different and unique pathways of
Step 4	Describe your analysis of the data.	Each report was read and data obtained showed that each student selected a career path that was unique. Each student completed their minimum time and actually some completed more time within their internship than was necessary. All students reported positive experiences within their internship.
Step 5	What planning and changes will or have occurred, as a result of assessment and analysis of data, to improve student learning?	It is clear from the reports of the students that an actual experience in environmental studies pathway was valuable to them. Since this was the first ES190 practicum in 3 semesters it pointed out that this should be offered certainly every year and to offer it for 2 units

**Program-Level Student Learning Outcomes (pSLOs) Assessed During 2010-12***Complete a separate page for each major and/or certificate you assessed.*

Program Name: \_\_\_\_\_

Semester  Fall  Spring

Year:

Program Type:

 Transfer Major

Assessed:

 Winter  Summer Certificate of Achievement Basic Skills Sequence Area of Emphasis Gen Ed Area

Step 1	Define the Expected Program Student Learning Outcome (pSLO).	Students will become actively engaged in the community as stewards of the environment.
Step 2	What method did you use to assess the SLO?	
Step 3	Describe the results of your assessment.	
Step 4	Describe your analysis of the data.	
Step 5	What planning and changes will or have occurred, as a result of assessment and analysis of data, to improve student learning?	

**Program-Level Student Learning Outcomes (pSLOs) Assessed During 2010-12***Complete a separate page for each major and/or certificate you assessed.*

Program Name: \_\_\_\_\_

Semester  Fall  Spring

Year:

Program Type:

 Transfer Major

Assessed:

 Winter Summer Certificate of Achievement Basic Skills Sequence Area of Emphasis Gen Ed Area

Step 1	Define the Expected Program Student Learning Outcome (pSLO).	
Step 2	What method did you use to assess the SLO?	
Step 3	Describe the results of your assessment.	
Step 4	Describe your analysis of the data.	
Step 5	What planning and changes will or have occurred, as a result of assessment and analysis of data, to improve student learning?	

**Program-Level Student Learning Outcomes for 2012-14**

(List the 3-5 most important expected student learning outcomes to be assessed over the next two years.  
Complete a separate page for each major and/or certificate you did not complete the assessment for the last 2 years.

Program Name: \_\_\_\_\_ Semester to be Assessed:  Fall  Spring  Winter  Summer Year: \_\_\_\_\_  
 Program Type:  Transfer Major  
 Certificate of Achievement  
 Basic Skills Sequence  
 Area of Emphasis  
 Gen Ed Area

<b>Step 1</b>	<b>Define the Expected Program Student Learning Outcome (pSLO).</b>	Students will acquire an awareness of energy needs of the state and country and identify methods to conserve and utilize renewable energies.
<b>Step 2</b>	<b>What method did you plan to use to assess the SLO?</b>	Through field trips and paper writing requirements students engage in research in both industry visitations and online research
<b>Step 3</b>	<b>When is the assessment going to be done and who is going to conduct it?</b>	Students are required to write this paper in ES 100.

Program Name: \_\_\_\_\_ Semester to be Assessed:  Fall  Spring  Winter  Summer Year: \_\_\_\_\_  
 Program Type:  Transfer Major  
 Certificate of Achievement  
 Basic Skills Sequence  
 Area of Emphasis  
 Gen Ed Area

<b>Step 1</b>	<b>Define the Expected Program Student Learning Outcome (pSLO).</b>	Students will choose to focus on one environmental issue and actively engage in project within the community.
<b>Step 2</b>	<b>What method did you plan to use to assess the SLO?</b>	Requirements for the paper are laid out in syllabus of course. They give length, time requirements and specific format to be followed in the paper.
<b>Step 3</b>	<b>When is the assessment going to be done and who is going to conduct it?</b>	Students do the assessment and turn it in at the end of each semester to be evaluated.

Program Name: \_\_\_\_\_ Semester to be Assessed:  Fall  Spring  Winter  Summer Year: \_\_\_\_\_  
 Program Type:  Transfer Major  
 Certificate of Achievement  
 Basic Skills Sequence  
 Area of Emphasis  
 Gen Ed Area

<b>Step 1</b>	<b>Define the Expected Program Student Learning Outcome (pSLO).</b>	Students who complete the Solar Energy certificate will be employable in the solar industry as planners, designers, and installers.
<b>Step 2</b>	<b>What method did you plan to use to assess the SLO?</b>	Through reviews of solar energy job announcements and comparing the curriculum of the courses to the job announcement skill requirements.
<b>Step 3</b>	<b>When is the assessment going to be done and who is going to conduct it?</b>	Faculty does it and is done on an on-going basis.

Program Name: \_\_\_\_\_ Semester to be Assessed:  Fall  Spring  Winter  Summer Year: \_\_\_\_\_  
 Program Type:  Transfer Major  
 Certificate of Achievement  
 Basic Skills Sequence  
 Area of Emphasis  
 Gen Ed Area

<b>Step 1</b>	<b>Define the Expected Program Student Learning Outcome (pSLO).</b>	
<b>Step 2</b>	<b>What method did you plan to use to assess the SLO?</b>	
<b>Step 3</b>	<b>When is the assessment going to be done and who is going to conduct it?</b>	



## Resource Planning

**Staffing** What staff changes or additional employees does your program need to function adequately?

**Faculty:** One additional part-time faculty member

**Management:** n/a

**Classified:** n/a

**Hourly:** n/a

Considering your current employees, what staff development/training does your program need?

Note: Complete all faculty request forms in separate files and submit with your program review report as an attachment.

**Technology** What improvements, changes or additions in equipment dedicated to your program are needed to function adequately?

**Equipment or Software** (e.g., computers, AV, lab equipment): Additional energy efficiency instrumentation is needed to update the energy efficiency portion of the program. Gas analysers (CO<sub>2</sub>, methane, natural gas), radon sensors, watt-meters and infra-red cameras. Addition shade analysis equipment is necessary for site assessment of solar photovoltaic system installation. ( Solar Pathfinder and Solmetric solar eye)

**Technical Infrastructure** (e.g., AV or computer infrastructure, cabling):

**Facilities** What improvements or changes to the facilities would you need to function adequately?

**Physical Concerns** (e.g. electrical, gas, water, foundation, space, ventilation). We need a dedicated space for conducting experiments in the program. It needs access to the outside. Photovoltaic systems need sunlight to function.

**Health, Safety and Security** (e.g.

**Other** What changes or other additions need to be made to your program to function adequately? Adequate funding. Also, there needs to be completion of the benches in Tech 212 to make the facility adequate for solar and electrical experimentation. We need electrical components that are required to finish off the balance of system requirements for the photovoltaic systems such as conduit, wire, connectors, roof rail attachment equipment, and electrician tools for handling these materials.

Also, a connection for the internet in the little lab area next to Tech 212 with some adequate computers, about 6 would do the job.

IUA and Dean Review

Complete this section after reviewing all program review information provided. IUA and Dean are to separately indicate the level of concern for the program that exists regarding the following Program Vitality Review (PVR) criteria. Add comments for any item marked with a 1 or 2. Identify whether the comment is made by the IUA or the Dean.

(Scale: 0 – No concern at all, 1 – Some concern, 2 – Serious Concern)

IUA/Dean

- ( 0 ) ( 0 ) a. Significant declines in enrollment and/or FTES over multiple years
- ( 1 ) ( 0 ) b. Significant change in facility and/or availability and cost of required or necessary equipment
- ( 0 ) ( 0 ) c. Scarcity of qualified faculty
- ( 0 ) ( 0 ) d. Incongruence of program with college mission and goals, state mandates, etc
- ( 0 ) ( 0 ) e. Significant decline in labor market
- ( 1 ) ( 0 ) f. Continued inability to make load for full-time faculty in the program
- ( 0 ) ( 0 ) g. An over-saturation of similar programs in the district and/or region
- ( ) ( ) h. Other \_\_\_\_\_

Program Review Check-list

- ( ) Department Contact Information is up to date: Department Chairs, full-time faculty, classified
- ( ) Organization Chart: Verify that it is up to date: (q:\college information\org charts) Report necessary changes to the Director of Personnel
- ( ) Curriculum Inventory complete (See data table spreadsheet under Curriculum Inventory tab)
- ( ) Both the Dean and IUA has completed the Dean and IUA Review section.

**Signatures, Individual Comments**

Department Chair: Barbara Jones                      Date: April 18, 2013  
Comments:

Division Dean: Claudia Lee                      Date: April 22, 2013  
Comments:

**( X ) No further review necessary**

**( ) We recommend this program for Program Vitality Review**

I have read the preceding report and accept the conclusions as an accurate portrayal of the current status of the program. Signatures are on file in the division office. Type the names of the faculty.

- ( X ) Tom Hersh
- ( )
- ( )
- ( )

I have read the preceding report and wish to add signed comments to the appendices. Signatures are on file in the division office.

- ( )
- ( )
- ( )
- ( )
- ( )

**Appendices**

- A. Data Sets
- B. Signed Comments
- C. Classified Position Requests
- D. Faculty Position Requests
- E. General Fund One-Time Funds Requests
- F. Curriculum Inventory
- G. SLO Inventory