

# Search Standards By User

Source: IPR

Cycle: Instructional Program Review 2016-17

User Name: Lead Faculty, Earth Science

Response Types: All Responses Types

## 1 Executive Summary

0 Executive Summary

Summarize your program's strengths, opportunities, challenges, and action plans. This information will be presented to the Board of Trustees. [1000 word limit]

## Response Detail

No Response Information to Display

## Narrative

The earth science program at Cañada College introduces students to sub-disciplines of earth science and to the realm of scientific thinking. The courses require students to learn content, develop critical thinking skills, and practice thinking like a scientist. Most of our students are general education students, and for many it is their first college-level science course. The department is currently building degree programs to accommodate students interested in completing earth science related degrees (e.g. earth science, geology, environmental science) and/or transferring in earth science related fields. In 2017 we will begin to research and develop relevant and impactful Earth Science-related CTE programs. Strengths of the earth science program include the broad range of disciplines offered (i.e. geology, oceanography, meteorology, environmental science, and geography) and opportunities to use remarkable local natural and human resources. Our local environment provides amazing opportunities for students to explore the concepts and processes they learn about in the classroom. Additionally, the United States Geological Survey Regional Office in Menlo Park is an excellent resource for seminars, guest-speakers, and internship opportunities.

Underprepared students continue to be a challenge. Many general education students in our classes do not have college level reading, writing and/or math skills. Additionally, they may not possess the time management, organizational, and learning skills that make it easier to succeed. Further, many students are overextended and do not have a good understanding of the amount of time they need to dedicate each week to their classes. Earth science faculty work to help students gain the skills they need to succeed, and we continue to examine content and instructional methods to better match the background and abilities of students. Additionally, we are beginning to work closer with the Learning Center and STEM Center to provide greater access to tutoring and extra-curricular earth science opportunities.

## Suggested Follow Ups

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## 2 Program Context

### 1 Mission

Identify how your program aligns with the college's mission by stating which categories of courses you offer: Career Technical, Basic Skills, Transfer, and/or Lifelong Learning. If your program has a mission statement, you may include it here.

#### Response Detail

No Response Information to Display

#### Narrative

Mission statement: The Earth Science Department endeavors to prepare students for successful transfer to 4-year institutions, provide the prerequisite earth science foundation for further study in earth science fields, foster critical thinking and active learning, and fulfill the needs and interests of students by having a well-rounded curriculum of lecture and laboratories. Currently our program focusses primarily on transfer students. Most students take earth science courses to fulfill general education requirements and/or degree requirements for their 4-year degrees. We see a need to develop pathways for earth science career/technical training, and we are beginning to research possibilities.

#### Suggested Follow Ups

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No Suggested Follow Ups to Display

## 2 Articulation

Are there changes in curriculum or degree requirements at high schools or 4-year institutions that may impact your program? If so, describe the changes and your efforts to accommodate them. If no changes have occurred, please write "no known changes".

#### Response Detail

No Response Information to Display

#### Narrative

There are no known curricular or degree requirement changes at the high school level that would impact our program, though we do acknowledge that our program would benefit from developing closer ties to the local high school programs. The Transfer Model Curriculum (TMC) template for Geology underwent 5-year review in 2016. No changes were made. We plan to use the template to create a geology transfer degree in 2017. One new course (Historical Geology) must be created. It is underway. A draft TMC for Environmental Science has been circulated for review at the state level. We plan to use the template to create an environmental science transfer degree in 2017. No new courses are needed. Once these degrees are locally approved through our curriculum committee, they will be submitted to the state for approval. We anticipate that both programs will stimulate additional interest in our department. Currently we lose a small number of students to our sister schools where these programs are available.

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No Suggested Follow Ups to Display

## 3 Community and Labor Needs

Are there changes in community needs, employment needs, technology, licensing, or accreditation that may affect your program?. If so, describe these changes and your efforts to accommodate them. If no changes have occurred, please write "no known changes". CTE programs: identify the dates of your most recent advisory group meeting and describe your advisory group?s recommendations for your program.

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## Narrative

Nationally, earth science jobs continue to outpace general employment growth . Many, but not all, of these career opportunities require a 4-year degree. Our department would like to develop effective new pathways (i.e. certificates or degrees) for career/technical education related to earth science. More research is needed related to industry demand and programs already available at nearby institutions.

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No Suggested Follow Ups to Display

## 3 Looking Back

4 Curricular Changes

List any significant changes that have occurred over the prior two years in your program's curricular offerings, scheduling, or mode of delivery. Explain the rationale for these changes.

## Response Detail

No Response Information to Display

## Narrative

We no longer offer evening classes, at least for now, due to their chronic low enrollment. Over the last two years, we have instead expanded our online offerings which we hope accommodates many of the same students who previously would have taken evening classes.

Our online enrollments have grown significantly over the last two years.

### Online Census Head Counts:

F2013 to F2015: 34 to 78 students (129% increase)

S2013 to S2016: 66 to 125 (89% increase)

We feel strongly that our ENVS, OCEN, and GEOG disciplines need to maintain an in-person presence on campus. Currently GEOL is only in-person, and METE is only online. We have very strong online and in-person Oceanography enrollment. Over the last 3 years, the fill rate for our core OCEN class has consistently been over 100%. Both online and in-person sections fill and have high success and retention rates. The Fall 2015 and Spring 2016 fill rates were 115% and 116%, respectively.

Environmental Science is the discipline within our department with the lowest fill rates, as we are trying to build the program by consistently offering two sections (one online and one in-person) each semester. In general, fill rates for ENVS have continued to increase every like-semester. We are very excited about the growth of the ENVS discipline. For the last two years, we have not offered in-person Geography classes, and have instead relied only on our online sections. We hope to successfully rebuild our in-person GEOG sections while maintaining strong online enrollment.

## Suggested Follow Ups

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No Suggested Follow Ups to Display

5.A. Progress Report - IPC Feedback

Provide your responses to all recommendations received in your last program review cycle.

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## Narrative

1. Program Context -- Community and Labor Needs: Would it be possible to address the employment opportunities in this area (State parks, conservation, regional planning, LEED)?

Yes! This is a priority for our department. We have done some preliminary research that suggests that there is an employment need for environmental consulting, environmental labs, and others. We foresee possible certificates/degrees for CTE. We need time to do more research, and we need assistance/support for the required networking.

2. Looking back --Curricular Changes Have the evening Earth Science courses that have been cancelled GE, or other?

All of the courses in our department are GE courses. Historically we tried to offer GEOG and GEOL classes in the evenings. Both of these classes fulfill physical science GE.

3. Looking back --Progress Report: What is the timeline for departmental training on SLOAC?

We have not yet set a timeline. We need to. We have tentatively set aside the departmental time during the August Professional Development Day for TracDat training. We hope to train and get updates completed on that day.

4. Current State of the Program-- Progress and Completion: Outstanding work on success and retention!

We think so too!... and we continue to improve. Notably though, equity data suggests we still need to do more to attract Hispanic students and retain Black/African American students.

5. SLO Assessment: Albeit forthcoming, but could we get more information on the current status of SLOAC in the department?

In 2014/15 we were able to get many courses caught up on assessment, but we are again behind. We need to institutionalize this process within our department. Further, we need to help faculty find easy ways to accomplish their assessment. We have set aside time during August 2017 Professional Development day to work through this as a department.

6. PLO Assessment: Even though most classes are GE, there still needs to be PLO plan and assessment.

We need training on this. We will work to include this in our August 2017 work day.

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5.B. Progress Report - Prior Action Plans

Provide a summary of the progress you have made on the strategic action plans identified in your last program review.

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## Narrative

1. Contact counselors and admin for general outreach ideas and ideas to better target evening students.

The lead faculty member met with administrators and counselors, and also initiated outreach with a few targeted programs. However, we decided to drop (for now) our evening classes. Many of these students can have their needs met by online classes. Notably though, we do acknowledge that online classes are not for everyone. We plan to explore offering GEOG 100 as a hybrid class, as we feel that increased face-to-face contact with colleagues and the instructor can increase success rates in GEOG 100.

2. Complete Environmental Science and Geology degrees program and submit to curriculum committee.

Both degrees have been started. Neither is completed. The responsible faculty member was on maternity leave early 2015 and has not found time to make progress on this since then. These degree programs are still a very high priority, and they will increase enrollments and help students meet their career and transfer goals.

ENVS: Notably, the state-wide process for the development of the transfer model curriculum for ENVS also stalled during this time period. The state TMC will likely be approved in mid 2017. We plan to submit our ENVS major paperwork to curriculum after the TMC is approved.... likely early Fall 2017.

GEOL: We plan to complete the necessary work on this degree path during Summer 2017.

4-5. Provide training and/or assistance in SLO assessment and data input for adjunct instructors AND With input from departmental faculty, develop a plan for systematic SLO assessment for all classes.

We did not accomplish this. We have set aside the departmental time during the August Professional Development day for this activity.

6. Get more info on PLO/ILO assessment:

Two faculty members made some progress on this in 2015, but we need to revisit this and get a refresher on what we need to do for PLO/ILO.

7. Build on current efforts for student involvement in fieldtrips, campus events, and internships, and include this in our marketing.

Some work was done. We have increased the number of student field-trip opportunities and annually have over 200 students attend field trips where they can learn and (importantly) network in our surrounding community. Next, we need to better institutionalize these opportunities and also include them in our (not yet developed) marketing materials.

## Suggested Follow Ups

Date

Suggested Follow Up

No Suggested Follow Ups to Display

## 6.A. Impact of Resource Allocations

Describe the impact to-date that new resources (equipment, facilities, research) requested in prior years' program reviews have had on your program. If measurable impacts on student success have been observed, be sure to describe these and include any documentation/evidence. If no resources have been recently requested, please write ?not applicable?.

## Response Detail

No Response Information to Display

## Narrative

Most of our instructional equipment and supplies continues to support two classes, Oceanography Lab and Geology Lab. We believe that authentic hands-on exploration is likely to improve student success, and the new materials allowed the students to work in smaller groups and thus get more personal hands-on time doing real science. Both courses showed gains in student retention and success during the last two years.

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## 6.B. Impact of Staffing Changes

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Describe the impact on your program of any changes in staffing levels (for example, the addition, loss or reassignment of faculty/staff). If no changes have occurred, please write "not applicable".

## Response Detail

No Response Information to Display

## Narrative

n/a

## Suggested Follow Ups

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No Suggested Follow Ups to Display

## 4 Current State of the Program

7 Enrollment Trends

Use the Productivity data packet to examine your enrollments (headcount, FTES, Load) and pattern of course offerings (Productivity by Courses by Semester). How have your enrollments changed? What changes could be implemented, including changes to course scheduling (times/days/duration/delivery mode/number of sections), marketing, and articulation of pathways that might improve these trends? NOTE: If other sources of data are used, please upload these documents or provide URLs.

## Response Detail

No Response Information to Display

## Narrative

Our census headcount, end of term headcount, FTES, load, and fill rates ALL continue to increase. Based on the annual data, all have increased from 2013/14 to 2014/15 and again from 2014/15 to 2015/16. We are excited about that trend. During that time period we expanded from 16 to 18 sections.

Typically we see significantly greater headcounts in the spring semester, compared to the fall semester. Perhaps new incoming students are not taking science GE classes their first semester and/or students are putting off their GE science courses until the spring semester prior to transfer.

Our online sections grew faster than our in-person sections, though retention and success rates continue to be lower in online classes, compared to in-person classes. On a positive note, the differences in retention and success rate between online and in-person classes is diminishing.

Oceanography is our highest enrolled and most productive discipline. Over the last 4 semesters, fill rates for OCEN are all over 100% and reached a high of 119%. Load is similarly high ranging from 585 to 690. Over the similar time period head count, load, and fill rates have maintained/increased for like semester Geology classes and increased for Environmental Science classes.

Fill rates in ENVS have been lower than our other disciplines as we are trying to grow the program from one section to two sections per semester. ENVS is growing, and had a FTES of 5.2 and a fill rate of 69% for our most recent semester. We will continue to offer two ENVS sections each semester (one in-person and one online). We would like to see growth in our GEOL 100 course, as that would also help with GEOL 101 enrollment.

Completion of the Geology and Environmental Science degree programs may also help boost enrollment in these disciplines. Also, the development of marketing materials and better contact with our feeder schools would also likely boost enrollment.

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## 8-A. Access & Completion

One of the goals of the College's Student Equity plan is to close the performance gaps for disproportionately impacted students. The Equity Supplement data packet indicates which groups are experiencing disproportionate impact in your program. Which gaps are most important for improving outcomes in your program? How can the college help you address these gaps? What changes could be made?

### Response Detail

No Response Information to Display

### Narrative

The Equity data packet suggest that Hispanic students have a 7.2% equity gap in access and Black/African American students have a 36.1% equity gap in completion. This data is important to us, and we want to work on both issues.

Increasing access to Hispanic students will also help us increase our enrollments. Better outreach and marketing by our department could help. Additionally, developing our two new degrees programs could help. After our degree programs are through the approval process, we hope to create marketing materials. The marketing materials would provide information on our programs, highlight past students, and also explain the importance of our disciplines... especially how environmental science is related to social justice. Additionally, we would like to develop closer ties with the Earth and Environmental Science courses at the feeder high schools. We could use support/assistance in developing marketing materials and also networking with our feeder schools.

Decreasing the equity gap in completion for our Black/African American students is also important. Anecdotally, we think that many of these students are in our online classes... which have lower completion rates than our in-person classes. We are working to increase retention and success in all of our online classes, but we would also welcome discussions on how to specifically increase retention and success for the Black/African American students in these classes.

### Suggested Follow Ups

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No Suggested Follow Ups to Display

## 8-B. Completion - Success Online

The college has a goal of improving success in online courses. Examine the "Course Success and Retention by DE vs Non DE" data table in the "Effectiveness: Success and Retention" data packet. What significant gaps do you see in success between online/hybrid and non-online courses? What changes could be made to reduce these gaps? If your program does not offer online/hybrid courses, please write "not applicable".

### Response Detail

No Response Information to Display

### Narrative

Our online sections grew faster than our in-person sections, though success and retention rates continue to be lower in online classes, compared to in-person classes. However, on a positive note, the differences in success and retention rates between online and in-person classes is diminishing. Also, all of our in-person AND online rates exceed the college success and retention rate goals of 70% and 84%, respectively.

2015/16:

Online Success Rate: 73.3%

In-person Success Rate: 74%

Online Retention Rate: 85.2%

In-Person Success Rate: 89.2%

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## 9.A. SLO Assessment - Compliance

Are all active courses being systematically assessed over a 3-year cycle? Describe the coordination of SLO assessment across sections and over time.

### Response Detail

No Response Information to Display

### Narrative

Most courses have systematic assessment, though some courses are behind in inputting data. It is also more difficult for courses that are offered sporadically and/or offered only by adjunct instructors. We intend to develop a plan (this year) for each course to ensure systematic assessment. Further, for courses with multiple sections we want to ensure that all sections are used in SLO evaluation. Currently this is not the case.

### Suggested Follow Ups

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No Suggested Follow Ups to Display

## 9.B. SLO Assessment - Impact

Summarize the dialogue that has resulted from these course SLO assessments. What specific strategies have you implemented, or plan to implement, based upon the results of your SLO assessment? Cite specific examples.

### Response Detail

No Response Information to Display

### Narrative

Some discipline peers have met to discuss Oceanography SLOs and how to amend them to be more useful. We have discussed the differences between online and in-person sections, the need to assess both, and anticipated differences in assessment results.

### Suggested Follow Ups

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## 10 PLO Assessment

Describe your program's Program Learning Outcomes assessment plan. Summarize the major findings of your PLO assessments. What are some improvements that have been, or can be, implemented as a result of PLO assessment?

### Response Detail

No Response Information to Display

### Narrative

Most of our students are GE students, so we need to be addressing GE/ILO. Thus far we have not enacted a plan. We need to do so, and we will need some training to get back on track.

We currently have one degree program that serves very few students. Within the next year we will hopefully have two new transfer degrees. We need to develop our PLO assessment programs as we develop these new degrees.

### Suggested Follow Ups

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No Suggested Follow Ups to Display

## 5 Looking Ahead

### 11 Program Planning

Construct Planning Objectives (through the Associated Planning Objectives field below) that describe your plans for program improvement over the upcoming two-years. As you write your objectives, be sure to explain how they address any opportunities for improvement that you identified throughout this Program Review. Add Action Plans and Resource Requests for any research, training, equipment or facilities improvements that will be needed in order to achieve your objectives.

### Response Detail

No Response Information to Display

### Narrative

There is no Narrative Entered.

### Suggested Follow Ups

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No Suggested Follow Ups to Display