

SBCC Instructional Program Review

[Program Review Instructions and Guidelines](#)

Print Page

Division: Sciences

Unit: Earth and Planetary Sciences

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1. Mission and Relation of the Instructional Program to the College

1. What is the mission of your unit?

The Earth and Planetary Sciences Department is multidisciplinary with courses in Astronomy, Geology, Geography and Environmental Science. Our mission is to promote thoughtful stewardship of our planet through quality earth and space science education. We provide Geology, Geography, and Environmental Studies Associate of Arts degrees, Astronomy and Geology Associate of Science degrees, and excellent preparation for transfer to 4-year institutions. We also provide a wide selection of GE physical and social science courses.

In accordance with the College Mission, we offer the diverse student community introductory science courses, second-year majors' courses, a wide offering of laboratory courses, and a robust field-oriented geology program, including 4-5 different multi-day field courses per year.

In addition, our well-equipped facilities provide students with unparalleled opportunities for "hands-on" instruction. Our faculty and staff maintain the quality of our program through regular review of our courses and offerings, continued faculty education and professional development, interactions with colleagues at UCSB and other academic institutions, frequent contacts with area industry, and consistent maintenance and upgrading of our equipment and facilities.

2. Identify or outline how your department/program contributes to the mission of the College.

Please limit to a single paragraph.

In accordance with the College Mission, we offer the diverse student community introductory science courses, second-year majors' courses, a wide offering of laboratory courses, and a robust field-oriented geology program, with opportunities for students at all levels of interest. In addition, our well-equipped facilities provide students with unparalleled opportunities for "hands-on" instruction and engagement, inspiring curiosity and discovery. Our faculty and staff maintain the quality of our program through regular review of our courses and offerings, continued faculty education and professional development, interactions with colleagues at UCSB and other academic institutions, frequent contacts with area industry, and consistent maintenance and upgrading of our equipment and facilities.

2. History

History (update) since the last program review.

1a. Provide a brief overall history of program. Please remember this is for the general reader who may know nothing about your program.

The Earth and Planetary Sciences department began around 1962 when Dave Williams, a Chemistry instructor with a geology degree initiated two classes: Physical Geology and Historical Geology. At that time Dave became half-time Chemistry and half-time Geology. Bob Gray was hired in 1967 and continued to grow the geology offerings, for example adding oceanography lecture and labs. Bob needed help, particularly with geology labs, and hired Phil Olsen from the UCSB geology program. The department also began offering three-day (non-credit) geology field trips in the fall and spring (which would eventually grow into the vibrant five-day field courses still offered today). The department hired Mel Curtis as part-time staff to help with equipment for classes and help with logistics for the field trips. By the end of 1969 mineralogy and petrology courses had been approved and were being offered, the three-day field trips had morphed into five-day trips, and the oceanographic program was going strong. In 1969, our first half-time Administrative Assistant was Lois (Rye) Blickenstaff. She served in this capacity until her retirement in 2003. By 1970 we offered a robust geology program, the new LSG building was built (housing the geology department), geology faculty were involved with NSF grants and NDEA funds to equip labs, and were involved with adult education at the Santa Barbara Museum of Natural History -- it was apparent that we now needed three full-time instructors. Also of note, around 1969 Bob Gray was successful in securing a NSF grant for the Spitz projector for the SBMNH planetarium.

In 1970, the new president of the college wanted an Astronomy program at SBCC. Due to Bob Gray's involvement with the Astronomy planetarium at SBMNH our department received the astronomy courses, and by 1975 Dick Willingham was hired as

a full-time instructor to teach the courses both here and at SBMNH. Bob was also busy putting together a GeoTech program in 1975 and received an NDEA grant for technical equipment. In addition to astronomy courses, Dick Willingham also taught a geophysics class in our Geotech program starting in 1976. Dick resigned to take a lucrative geophysics job in Ventura in 1979. We also hired adjuncts to teach at the planetarium at the same time. At about the same time (1974) we got involved in the Environmental Studies program that was required by UCSB. Initially, 6 courses were proposed, but 2 were dropped (because they required calculus). Of the remaining 4, we got Environmental Geology and also Energy & Resources. Unfortunately, since the oceanographic companies had pulled out of Santa Barbara & Ventura we dropped the Oceanographic Tech program around 1976. By 1975, our department was also able to get our 5-day Fall and Spring Field Trips as separate courses with 2.0 credits. This increased the numbers of students going on these field trips. In the same way, our Geology Club adventures to the Colorado Plateau (5-days) at the end of the year were also approved to go credit.

1976 was a big year for our department. We expanded greatly in new courses for the new GeoTechnician 2-year program (six courses, including the Summer Field Geology Mapping courses). We also hired Bill Harz for the lab tech staff position and hired Jan Dependahl as an LTA for our expanding lab offerings. Naomi Sullwold was hired for our geology illustration course. Karl Halbach was hired to teach many of our introductory geology courses. We hired Fred Marschak for the Astronomy program labs at SBMNH. There wasn't much to the geography program at this time. We offered Physical Geography, taught by Bob Gray in the mid-1970's. Carl Sundbeck was hired in 1981 to teach half-time in astronomy and half-time in geography. By 1980 the identity of the Earth and Planetary Sciences department was close to what it looks like today.

Phil Olsen retired in 1989 and was replaced by Jan Schultz in 1990 as a full-time geology instructor. Karl Halbach's retirement opened the door to hire Jeff Meyer in 2005. That same year Erin O'Connor was hired as a second full-time Astronomy instructor. With Carl Sundbeck's retirement in 2009 the geography courses, which now included Weather and Climate, Economic Geography, and Intro to Geographic Information Systems lecture and lab as well as the Physical Geography lectures and labs, were consolidated into a single full-time position (along with a number of adjunct faculty teaching in the geography program). Michael Robinson was hired in 2009 as the first full-time geography instructor. At the same time Human Geography, which had been part of the History department, was incorporated into the Earth and Planetary Sciences department. A few years later Bob Gray retired and was replaced by Bill Dinklage (2012). Bill Harz retired and was replaced by Kevin McNichol as the field lab tech. Jan Dependahl retired and was replaced by Eiko Kitao as a 10-month lab tech, which later became a 12-month position. Jan Anderson, our long-time Administrative Assistant, retired and was replaced by Libby Gans. Fred Marschak retired and was replaced by Sean Kelly (2015). In 2017 Jan Schultz retired and was replaced by Stephanie Mendes. Today the Earth and Planetary Sciences department include the Astronomy program, the Geology program, the Geography program, and part of the Environmental Studies program. We have 6 full-time faculty members, 11 part-time faculty members, and offer approximately 30 unique courses per year, including many of the courses first developed in the 1960s and 1970s. We serve an average of 1,200 students per semester, house four vibrant EPS-related clubs, and continue to offer high-quality education to a wide cross-section of students.

1b. Provide a history since last complete program review.

Since our last Program Review, the department has experienced a variety of changes in both our faculty and in our curriculum. Some of these changes have been brought about by our increased offerings, increases in our student population, and incorporation of new faculty.

- In the time since the last program review, two full-time faculty have retired and two new faculty have been hired (1 in Astronomy and 1 in Geology). We continue to have excellent adjunct faculty (both long-term and new) teaching in all of the programs in our department.
- Enrollments are healthy in all classes.
- 50 declared Geological Sciences/Geology for Transfer majors and 29 declared Geography/Geography for Transfer majors as of this fall.
- New astronomy A.S. was recently approved. We had two students earn the Astronomy A.S. degree in Spring 2017 and currently have 9 declared majors.
- We introduced an online section of our Introductory Human Geography Course, GEOG 102, which has consistently filled to capacity. This also helps address the needs of nontraditional and underserved student populations.
- A new course, EARTH 104, Introductory Astrophysics was approved and offered. This course satisfies Area 5A of IGETC and Area B1 of CSU GE science requirements. A new advanced astronomy lab EARTH 103A, 103B and 103C was approved and offered starting Spring 2017.
- Geology curriculum, AA and AS were revamped to better align with 4-yr transfer institutions.
- Geography curriculum and AA were revamped to better align with 4-yr transfer institutions.
- We are at capacity in the EBS 102 lecture room. We offer sections Monday through Thursday from 8am to 5:15pm, and periodically Friday Astronomy classes. Our lab rooms (EBS 115 and EBS 123) are almost completely maxed out from Monday morning through Thursday evening.
- As of this fall, the department has 4 active student clubs, plus one student chapter of the American Association of Petroleum Geologists (AAPG).
- We maintain extensive field trip offerings with faculty, staff, and student involvement. Trips include two five-day field courses (one each semester), one two-week field course, a three-week field mapping course (every other summer), an eight-day field course (alternating summers), and many day trips to examine and enjoy local geology, geography, and astronomy.
- Based on the growth of the geography program, we have twice requested a new geography tenure-track position: in the 2014-15 and 2015-2016 Senate ranking processes. We were not successful, but another full-time geography faculty member is a continued need in our department.

3. Statistical Data Analysis

Statistical data for the last three years will be provided by the Office of Institutional Assessment, Research and Planning by the start of the Fall semester. The data will include:

Departmental WSCH

- First census WSCH and FTES for the department
- First census WSCH and FTES by course

1a. Write about enrollment trends that the department/program believes are important to its planning and resource needs, and comment on the department's/program's insights on why they are occurring.

Table 1 summarizes WSCH and FTEF data for the Earth and Planetary Sciences Department, Fall 2014-Spring 2017.

TABLE 1. F14 Sp15 F15 Sp16 F16 Sp17
 Total WSCH 6,611 6,072 5,942 5,482 5,392 5,646
 WSCH/FTEF 646 632 614 574 587 593
 WSCH/FTEF Rank* 8 8 8 8 8 8
 *out of an average of 65 departments with WSCH

Table 2 presents FTES and TLU data for the Earth and Planetary Sciences Department, Fall 2014-Spring 2017.

TABLE 2. F14 Sp15 F15 Sp16 F16 Sp17
 FTES
 Adjunct 126.7 119.1 105.1 107.2 71.8 73.4
 Contract 93.6 83.3 93.0 75.5 108.0 114.8
 TOTAL 220.3 202.4 198.1 182.7 179.8 188.2

TLUs
 Adjunct 83.7 78.3 67.4 75.1 49.2 51.9
 Contract 69.9 65.9 77.7 68.2 88.5 91.0
 TOTAL 153.6 144.2 145.1 143.3 137.7 142.9

Between Fall 2014 and Spring 2017 our WSCH has ranged from approximately 5,500 to 6,600 and our WSCH/FTEF has ranged from approximately 575 to 650. The Earth and Planetary Sciences Department WSCH/FTEF consistently ranked 8th out of an average of 65 departments over this time period. This suggests that our slight decline in FTES and TLUs is consistent with that being experienced across the campus.

The quantitative information provided by SBCC Institutional Research reveals a slight decline in total TLUs and FTES for the Earth and Planetary Sciences Department. This reflects the current decline in enrollments experienced across the college, though we only experienced a -5.3% annual decline in total TLUs between Fall 2014 and Fall 2016 and only a -0.5% annual decline in total TLUs between Spring 2015 and Spring 2017. The decline in FTES across the department was slightly higher, but still only an average annual change of -9.7% between Fall 2014 and Fall 2016 and -3.6% between Spring 2015 and Spring 2017. The low annual percentage drop for the spring semester comparisons reflects a reversal of the decline between Fall 2016 and Spring 2017, showing recent growth in our department amid continued institutional declines. Many of our classes (ERTH 101, EARTH 102, EARTH 115, EARTH 131/132, EARTH 141 to list a few) experienced little or no decline in enrollments over this period. We currently do not offer as many sections of some courses as we could, particularly our Introduction to Astronomy, Physical Geography lecture, Human Geography, and geology and geography labs due to a lack of available instructors and/or room availability. Our programs are often unfamiliar to incoming students, as these disciplines are not commonly emphasized in the K-12 system. Students often try a course in our department and decide to sample more of our offerings. The majority of our majors are exactly these students, who may not have even known these majors existed prior to taking one of our classes.

It is interesting to note that in 2014/2015 and 2015/2016 the FTES and TLU loads were greater for adjunct faculty than for full-time faculty. This was due to a faculty retirement in 2013/2014 (Fred Marschak, Astronomy) that wasn't replaced the following year, a faculty sabbatical in 2014/2015 (Jeff Meyer, Geology), and a faculty sabbatical in 2015/2016 (Erin O'Connor, Astronomy).

1b. Describe how the department/program is responding to these changes.

We are observing an increase in declared Geology and Geography majors compared to previous years, likely due to extensive efforts to restructure our programs to better align and articulate with four-year institutions. The interest level in our programs appears to be increasing in recent years. The Geology major is increasing as geologic/resource issues have become recognized as more important in our society. Students with degrees in Geology can get jobs, and we hope to continue to serve this need. The increased enrollment in Geography courses and the increased sections and geography course offerings reflect a growing interest in the major. The Geography major is widely appealing as it incorporates environmental science, social science, and technology (such as Geographic Information Systems and Remote Sensing). Increased recognition of this dynamic degree and the breadth of careers possible has led and will continue to lead to increased student interest. The Astronomy A.S., while still small, presents a new opportunity for our students here at SBCC.

With the campus-wide declining enrollments we are keeping a close eye on our course offerings. We continue to try to be efficient in our teaching and to offer students the introductory courses needed to satisfy transfer requirements while including a robust selection of majors courses in each of our programs. **Student Statistical Data**

Most of the data for the following responses can be found in the [Program Review Data Library](#).

2a. Successful Course Completion Rate

The Successful Course Completion Rate is the percent of students receiving a grade of C or better, or a P for P/NP courses. This data can be found on the Outcomes tab.

Please discuss the data, identify any significant positive or negative indications and trends, and describe any strategies your department is using or considering relative to these outcomes.

Our department continues to experience high success rates for our students, with an average success rate of 79% during the academic year and 88% in the summers. Overall, this is very satisfactory, and we see no need to make any changes at this time. We care deeply about the success of our students and continually seek ways to improve student success in all of our classes. We will monitor student success rates in the future as the SLO/CIP cycle progresses.

Tutoring and reading hour allotments are critical for the success of students in our department, and any cuts to this funding would likely have a negative impact on student success.

Historically, few of our geology and geography majors complete the degree program. Rather, they transfer to a 4-year institution for completion of their degrees. Our revamp of the Geology and Geography degrees and continued advising of students in our classes is resulting in more students declaring Geology and Geography objectives, and we predict an increase in the rates of degree completion in the future. The new Astronomy A.S. will likely generate more Earth and Planetary Sciences majors as well.

2b. Successful Course Completion by Modality

Examine the data on successful course completion by instructional method (face-to-face, fully online, and hybrid), both for the college overall, and for your department. This data can be found on the Outcomes tab.

Please discuss the data, identify any significant positive or negative indications and trends, including a comparison to college outcomes, and describe any strategies your department is using or considering relative to your outcomes.

Our average students success rates (both academic year and summer) over this period are 82%, compared to 79% for the college as a whole. The only online courses we offer are fully online: Human Geography (GEOG 102). The average student success rate in this course over this period is 71%, compared to an average student success rate of 67% for all SBCC online classes offered during this period. We do not currently offer any hybrid classes. While we continually seek ways to increase student success in all of our courses, we find these percentages very acceptable.

2c. Successful Course Completion by Student Equity Populations

Examine the data on successful course completion by student equity populations. This data can be found on the Outcomes tab.

Please discuss the data, identify any significant positive or negative indications and trends, and describe any strategies your department is using or considering relative to these outcomes.

a. Ethnicity: Overall increases in success are seen for students of two or more races/other and for Hispanic students (from 71% successful in Fall 2014 to 91% successful in Spring 2017 and from 69% successful in Fall 2014 to 78% successful in Spring 2017, respectively). Average success rates for this period were 81% (average N/semester=97) for students of two or more races/other and 72% (average N/semester=350) for Hispanic students. This surpasses the college average of 74% success for students of two or more races/other and is essentially parity with the college average of 71% success for Hispanic students during this period. While success rates among students of two or more races/other are on par with White students in our department, average success is 83% for White students (average N/semester=676) and 85% for Asian/Filipino/Pacific Island students (average N/semester=71), success rates among Hispanic students still trail behind success rates for Asian/Filipino/Pacific Island and White students. With continued funding and increased attention to STEM/STP programs we would expect success rates to rise. Tremendous increase in success has occurred among our black/African American students, from 39% success in Fall 2014 to 72% success in Spring 2017, with a 64% average success rate during the academic year. These numbers are not straight-forward to interpret, as this increase coincides with a drop in the number of black/African American students we have served. The numbers have dropped from 59 students in Fall 2014 to 36 students in Spring 2017, with an average of 34 Black/African American students per semester. Perhaps students who might otherwise have failed are either shying away from our classes or are dropping before the first drop deadline.

b. Gender: The data show that over this time period an average of 82% of females and 83% of males successfully completed courses in Earth and Planetary Sciences. In comparison, over this time period an average of 76% of females and 74% of males successfully completed courses at the college. During the academic year an average of 80% of females (average N/semester=567) and 78% of males (average N/semester=668) successfully completed courses in our department. During the summer an average of 86% of females (average N/semester=72) and 91% of males (average N/semester=68) successfully completed courses in our department. Overall, there appears to be very little difference in success rates based on gender, and overall success rates in our department exceed those of the college as a whole.

c. Age: Young students (under 20) are succeeding at an increasingly high rate semester by semester over the three years, increasing from 73% in Fall 2014 to 82% in Spring 2017. This is encouraging news to see, as we have been sensitive to

discussions about equity on campus and about the difficulties students face coming to college with disadvantages in their preparation. Typically these are young students. Students in the 20-24 age bracket also increased their success rate, from 74% in Fall 2014 to 86% in Spring 2017. While as a department we have not proactively taken measures specifically aimed at our younger students, we believe that increased awareness of the need for equity and retention has permeated our department and may be partly the cause of the increase, especially coupled with institutional strategies, such as Starfish and the STEM grant. It would be interesting to see if other departments are seeing similar increases in student success in their under 24 students.

Across all age brackets the Earth and Planetary Sciences department success rates exceeded those of the college averages. Over this time period our under 20 success rates were 84% compared to the college average of 78%, 20-24 success rates were 81% compared to the college average of 75%, 25-49 success rates were 83% compared to the college average of 72%, and 50+ success rates were 84% compared to the college average of 74%.

d. Socioeconomic status (as measured by recipient of the Board of Governors fee waiver): The data show that over this time period an average of 80% of BOG recipients and 85% of non-BOG recipients successfully completed courses in Earth and Planetary Sciences. In comparison, over this time period an average of 70% of BOG recipients and 80% of non-BOG recipients successfully completed courses at the college. During the academic year an average of 75% of BOG recipients (average N/semester=571) and 82% of non-BOG recipients (average N/semester=664) successfully completed courses in our department. During the summer an average of 86% of BOG recipients (average N/semester=68) and 91% of non-BOG recipients (average N/semester=72) successfully completed courses in our department. Overall, non-BOG recipients appear to be slightly more successful than BOG recipients, though the difference is small and overall success rates are high.

e. First generation to college: The data show that over this time period an average of 73% of first generation to college students and 84% of non-first generation to college students successfully completed courses in Earth and Planetary Sciences. In comparison, over this time period an average of 67% of first generation to college students and 77% of non-first generation to college students successfully completed courses at the college. During the academic year an average of 67% of first generation to college students (average N/semester=143) and 81% of non-first generation to college students (average N/semester=1,092) successfully completed courses in our department. During the summer an average of 81% of first generation to college students (average N/semester=17) and 89% of non-first generation to college students (average N/semester=123) successfully completed courses in our department. Overall, non-first generation to college students are more successful than first generation to college students, though overall success rates remain higher than the college average. It is interesting to note that first generation college students are particularly successful in Earth and Planetary Sciences summer courses.

Under the STEM grant Gateway-style tutoring was made available to science courses that are in a majors track even though they may not be at the introductory level. This has led to an increase in tutoring available in our department, and we expect that this is a contributing factor to the higher than college average success rates as well.

2d. Degrees and Certificates

On the "Awards by Major" tab, examine the data and trends for the college overall, and for your department.

Please discuss the data, identify any significant positive or negative indications and trends, and describe any strategies your department is using or considering relative to these outcomes.

For the college as a whole Spring awards by major are, not surprisingly, larger than Fall awards by major. The college experienced a steady increase in awards by major from Spring 2012-Spring 2016, but these numbers dropped Spring 2017. This is not surprising with the drop in enrollment experienced by the college.

Many students in our department transfer with receiving an A.A. or A.S. in one of our programs. Since Fall 2012, there are typically one or two students per year who receive an award in Geology. For the past few years there have been three students per semester who receive the Geography A.A. for Transfer and two or three students per year who receive the Geography A.A. As mentioned previously, two students received the new Astronomy A.A. in Spring 2017.

For our department, the revamp of the Geology and Geography A.A. degrees and Geological Sciences and Astronomy A.S. degrees is resulting in more students declaring these objectives than in the past. As students become aware of these pathways and as the pathways become more solidified we expect an increase in the rates of degree completion in the future.

2e. Transfers

The number of majors who transfer to a four-year college or university can be found on the "Transfers by Major" tab.

Please discuss the data, identify any significant positive or negative indications and trends, and describe any strategies your department is using or considering relative to these outcomes.

Similar to Awards by Major, the Transfers by Major are typically greater in the Spring than in the Fall. Since the 2014/2015 academic year we typically transfer around ten students per year in each of our Geology and Geography programs. This number increased slightly for both programs in Spring 2016 with the addition of the Geology for Transfer and Geography for Transfer options.

We have implemented a Geology A.S. tracking method which we use to advise Geology majors and keep them on track with their majors requirements. We bring the UCSB Geology undergraduate advisor in once per year to meet with our majors. Both Geology and Geography have developed undergraduate major brochures. All faculty are involved in one-on-one advising.

2f. CTE Earnings and Job Placement

For Career Technical Education programs, please summarize and discuss the program completers' earnings information and/or job placement information (if available).

See the [CTE Launchboard](#), [Salary Surfer](#) or [Wage Tracker](#) for additional data regarding CTE program completers.

N/A

2g. Additional Department-Specific Data

Please provide and discuss any additional data unique to your department or program.

Our programs are often unfamiliar to incoming students, as these disciplines are not commonly emphasized in the K-12 system. Students often try a course in our department and decide to sample more of our offerings. Earth and Planetary Sciences courses are incredibly diverse, ranging from astronomy to geology, weather and climate to oceanography, world regional geography to Geographic Information Systems, and a variety of field-based geology and physical geography classes. The majority of our students may not have even know these majors existed prior to taking one of our classes but often find the classes interesting and relevant. They also learn of the many job opportunities available in the wide variety of fields connected with Earth and Planetary Sciences. For example, Geologists evaluate environmental issues and impacts, assess geohazards such as earthquake, flooding, or landslide potential, explore for economic resources such as mineral, ground water or energy resources, and advise us on our interactions with earth systems. Geographers enjoy careers in positions in business, government, environmental solutions, resource management, intercultural communication, forestry, teaching, and GIS, to name a few.

The American Geosciences Institute has published the following facts regarding the Earth Science/Geoscience workforce in California*:

- 46,600: geoscience employees (non-federal/selfemployed) in 2015

- \$87,900: average median geoscience employee salary

- 21,100: jobs in extractive industries in 2015

- 115: academic geoscience departments

*<https://www.americangeosciences.org/policy/factsheet/states/california>

Student Learning Outcomes (SLO) Assessment

- Student SLO performance reports

3a. Provide a brief description of your department's/program's analysis of the student performance data on the course, program and Institutional SLOs (ISLOs).

Course SLOs have been completed for all active courses in the department. Program SLOs are completed for Geology, Astronomy, Geography and Environmental Sciences. While some courses have been scored, this semester our department is working on scoring SLOs and writing CIPs for all courses, in preparation for the end of the current SLO cycle next semester. We are in communication with the SLO Coordinator to complete all of this work.

3b. Summarize the strategies your department/program has implemented to improve student achievement of the course SLOs, certificate, degree and/or program SLOs, and the ISLOs. Include the documented and/or perceived changes in student learning.

SLO improvement plans are individualized for each course, as issues and feedback vary by course and instructor. We discuss SLOs and CIPs as a department, or at least among the faculty in a program, to best integrate feedback across our curriculum. These discussions have led faculty to modify both the presentation of material in some courses as well as the assessment of student learning. We continue to score courses and reflect upon the results.

3c. Review your department's/program's SLO Implementation Cycle Plan and indicate whether or not you are on target for its completion. Explain any changes to your SLO plan.

While we still have courses to score and improvement plan to write, we are on track with our SLOs as well as on track to complete CIPs for all courses before the end of the current SLO cycle.

Faculty Information

- Faculty head count (contract and adjunct)
- TLU and FTEF totals (by contract and adjunct)
- Contract overload for department by year

4. Where appropriate, explain how the faculty information noted above is affecting the department's ability to achieve its mission and/or objectives.

Table 3 presents FTES and TLU data for the Earth and Planetary Sciences Department, Fall 2014-Spring 2017.

TABLE 3. F14 Sp15 F15 Sp16 F16 Sp17

Faculty Headcount

Adjunct 13 14 14 15 10 11

Contract 5* 5* 6** 6** 6 6

FTEF 10 10 10 10 9 10

* Jeff Meyer on sabbatical 2014/2015, Fred Marschak retired after replacement deadline.

** Erin O'Connor on sabbatical 2015/2016.

FTES

Adjunct 126.7 119.1 105.1 107.2 71.8 73.4
 Contract 93.6 83.3 93.0 75.5 108.0 114.8
 TOTAL 220.3 202.4 198.1 182.7 179.8 188.2

TLUs

Adjunct 83.7 78.3 67.4 75.1 49.2 51.9
 Contract 69.9 65.9 77.7 68.2 88.5 91.0
 TOTAL 153.6 144.2 145.1 143.3 137.7 142.9

During the 2014/2015 academic year, the Earth and Planetary Sciences Department had 5 full-time contract faculty and 14 adjunct faculty. One full-time instructor, Jeff Meyer (Geology), was on sabbatical and the previous year Fred Marschak (Astronomy) retired after the replacement deadline. Fred was replaced the following year and by the 2016/2017 academic year we had 6 full-time contract faculty and 11 adjunct faculty.

Including overloads, over this time period our department has declined from approximately 6,611 WSCH at 10 FTEF in Fall 2014 to 5,646 WSCH at 10 FTEF in Spring 2017. As discussed previously, this reflects the declining enrollment experienced across campus during this time period, and our 8th place WSCH/FTEF rank (out of an average of 65 departments with WSCH) suggest that our drop in WSCH was consistent with that experienced in other departments.

Approximately 45% of TLUs were covered by contract faculty in Fall 2014. That increased to 64% of TLUs covered by contract faculty in Spring 2017. Over that same time period 55% of TLUs were covered by adjunct faculty in Fall 2014 and 36% of TLUs were covered by adjunct faculty in Spring 2017. The 2014/2015 and 2015/2016 FTES and TLU loads were greater for adjunct faculty than for full-time faculty. This was due to a faculty retirement in 2013/2014 (Fred Marschak, Astronomy) that wasn't immediately replaced the following year which left us down one instructor, a faculty sabbatical in 2014/2015 (Jeff Meyer, Geology), and a faculty sabbatical in 2015/2016 (Erin O'Connor, Astronomy). By 2016/2017 we were back to a normal full-time to adjunct teaching distribution.

Table 4 presents the 2016/2017 academic year EPS Department TLUs and FTEF by discipline. These data were retrieved from the SBCC Fall 2016 and Spring 2017 online class schedules.

TABLE 4.

Discipline	Astronomy	Geology	Geography	Totals
TLUs/Year	89.3	127.9	77.3	294.5
FTEF	6.0	8.5	5.2	19.6
FT Faculty	2	3*	1	6
FTF/FTEF (%)	33.6	35.2	19.4	30.6

* NOTE: one geology FT faculty had 100% release to HSI STEM grant

We did not have access to separate data for contract overload by year for our department. However, full-time faculty are teaching 33.6% and 35.2% of the standard (15 TLU) full-time faculty loads in Astronomy and Geology, respectively. The one full-time faculty member in Geography is only teaching 19.4% of the standard full-time faculty load in Geography. These percentages highlight a need for additional full-time faculty members in our department, particularly in Geography. The increase in sections and course offerings are primarily falling on the shoulders of adjunct faculty. This is expected to increase even more in the future if we are able to add to our current class offerings to meet student demand.

Department/Program Revenue and Expense Data

- General Fund unrestricted and restricted budget (costs)
- Full-time equivalent (FTE) employees and costs
- Total expenditures per year
- Revenue generated by program (where appropriate)

5. Where appropriate, use this information to identify your faculty, staff and resource needs.

We are consistently on-target with our department's budget. We are careful to monitor our expenditures monthly to ensure we stay within budget. We continue to utilize a vibrant and vital tutoring program which serves most all of the courses in our department and implore the college to remain committed to funding tutoring here at SBCC.

Faculty and Staff Needs:

- New full-time Geography faculty (Human Geography emphasis)
- Reclassify current Administrative Assistant I position to Instructional Development Specialist.

Equipment Needs: Present & Future

1. New & Replacement equipment: None at this time.

2. Repair of equipment: None at this time.

3. Other requests: We are in desperate need of office space, both for our (many) existing adjunct instructors and for any new faculty we are able to add to the department.

4. Instructional recommendations / Ongoing Departmental Projects: Computer cataloging of Earth Sciences teaching collections. We need student labor or possible internship help from the Foundation. The benefit of this catalog would be enhanced access to our collections for classroom and lab use.

4. Programs and Curriculum

1a. All course curriculum is required to be reviewed by the department and the Curriculum Advisory Committee every five years as per State Ed Codes. It is the responsibility of the department chair to keep the curriculum records up to date. Courses not reviewed in a timely manner will not be scheduled and are subject to deactivation.

Curriculum status should be updated. Verify that your department is on track in its review of curriculum. List the courses that you will need to update for the next year and the lead for each of those courses by [COMPLETING THIS FORM](#).

1b. Student Learning Outcomes status should be updated. Verify that your department is on track in its SLO data collection and creation of Course Improvement Plans. List the courses that you need to collect data for this year and the lead for the Course Improvement Plan for each of those courses by [COMPLETING THIS FORM](#).

Check this box to confirm that you have verified the curriculum and that all CSLOs have been updated for your department.

5. Collaboration with Other Units Including Instruction, Student Services and/or Administrative Units

1. Discuss any collaborative efforts you have undertaken with other units of the College. Offer an assessment of the successes and challenges in working with these units.

Collaboration with Other Units of the College

* The Geology Club, faculty, and staff collaborate with Student Life to sponsor many different activities such as social gatherings, hikes, and geology field trips.

* The EPS faculty collaborate with the Computer Science department to utilize the Sciences Computer Lab for several classes including the GIS class.

* The EPS faculty, staff, and students make extensive use of the Gateway Tutoring Center and staff to enhance student learning.

* The EPS faculty collaborate with Student Services, EOPS, DSPS, and the Career & Transfer Center to match student needs with student services.

* The Geology faculty and staff collaborate with the Culinary Arts Department faculty, staff, and students to provide food services on many of the major field courses.

* The EPS faculty collaborate with the Luria Library on displays and panel discussions.

* The EPS faculty collaborate with Biology, Chemistry, and Physics during Week 0 to provide a more focused orientation for students interested in STEM majors.

* The EPS faculty and staff are involved with campus facilities and security in developing and implementing emergency response programs, including CERT training.

* The EPS faculty and staff, through the Transportation Department, provide and coordinate the multifaceted caravan of vehicles used on the major field courses.

* The EPS department provides transportation for other departments, including Athletics, Biology, and Art.

* The Geology faculty & staff collaborate with the Allan Hancock geology classes on both of the five-day field courses.

* The Geology faculty, staff, and students collaborate with other departments as part of the Environmental Studies program.

* Astronomy Club students collaborate with the Physics Club\Physics Department on projects related to physics and astronomy.

* Astronomy Club students schedule joint hikes and activities with the Adventure Club, for example the night hike/telescope observation at Knapp's Castle.

* The Astronomy program works closely with UCSB faculty to provide our students with internship experiences and research opportunities in UCSB research laboratories. Various former students have had their work published as a result.

* The Astronomy program has collaborated with the International Occultation Timing Association (IOTA) to observe occultation of stars by near-Earth asteroids. These measurements allow IOTA to model the asteroid shape and infer the mass.

* The Geography club collaborates with student life, with the SBCC feminist club, and with the History club to sponsor social gatherings, documentary viewings, environmental clean up, community enrichment, hikes, and field trips.

- * The Geography and Geology faculty collaborated on the faculty compensation study.

6. Outreach Activities

1. Discuss any activities or projects you have undertaken with other educational institutions (high schools, colleges or universities), the community and/or business/industry. Describe any new outreach activities that you are considering. Collaborative efforts with High Schools, Colleges, and Universities:

- * Through the Dual Enrollment program, our Geology faculty have taught EARTH 111, 115, and 151 at Santa Barbara High School and Carpinteria High School. (Currently inactive due to budget cuts)
- * Our Geology Club students have provided many local schools with rock and mineral identification sets and accompanying instructional materials.
- * The Geology Club is planning on updating the teaching rock & mineral kits that were given to all K-12 schools, and contacting teachers to help utilize the kits.
- * The EPS faculty and staff provide an "Open House" week during the inter-session and invite K-12 schools for a field trip to our department.
- * The EPS faculty and staff would like to communicate with local junior high and high school faculty and students, to change the perception that Earth Science is considered a remedial science in our school district.
- * EPS faculty & staff provide expertise for many local 'Science Night' school events, and our Geology and Geography Club and Astronomy Club students have helped with hands-on, interactive displays for all ages.
- * EPS faculty & staff are involved in 'Science Discovery Day' events and college fair activities.
- * Geology faculty give geologic presentations at Anacapa School as part of the students' preparation for their spring and fall one-week field study programs.
- * Our second year majors' class is given an annual tour of the material lab at UCSB to learn isotope analysis.
- * EPS faculty & staff, with help from our students, have gone to classrooms at K-12 schools in our community to assist the teacher in various Earth Science topics. We have taken specimens and models for interactive learning.
- * EPS faculty participate in local school science nights.
- * The Geography faculty participate in local career days through Santa Barbara Partners in Education.
- * The Geography faculty regularly recruit guest speakers from the faculty and graduate student populations at UC Santa Barbara, one of the top Geography departments in the country. Graduates of the SBCC Geography have gone on to major in Geography at UC Santa Barbara.
- * The Geography faculty participate in panel discussions at local high schools regarding careers, education, and difficulties found in the Earth Sciences and careers in Earth Science.
- * The Geography faculty visit local classrooms to discuss weather and climate, the rock cycle, and the environmental consequences of trash and water misuse.

Community:

- * The Geology faculty & staff have placed and maintain an interactive real-time earthquake station outside the EBS Building (open 24/7 to students and the community).
- * The EPS faculty & staff have placed display cases outside our department with up-to-date news on current Earth Science events for our students and the community.
- * The Geology faculty and staff provide guided tours of our department, with fossil, rock, and mineral specimens for various elementary schools, youth organizations, and pre-schools.
- * The Geology faculty and staff are always available to the public to solve geologic problems, identify rocks and minerals, and answer any questions that they may have.
- * The Geology faculty & staff have put up educational displays at local events such as the Ventura Gem & Mineral Show.
- * The Geology faculty have given lecture series on a variety of topics to different community groups such as Gem and Mineral Societies, the Jewish Center, Valle Verde Retirement Community, etc.
- * The Geography faculty guest lecture in the physical and social sciences in an effort to promote the dynamic field of geography.
- * The Geology faculty and staff provide local geology tours for various public groups.
- * The Geology Club has assisted in a Plate Tectonics workshop, where they have helped construct 3-D models to be given to K-12 science teachers.
- * The Geology faculty and staff collaborate with many institutions such as the Los Angeles County Museum of Natural History, the Channel Islands National Park, Vandenberg Air Force base, the Santa Barbara Museum of Natural History, and the Santa Barbara Sea Center.
- * SBCC, the Department of Earth and Planetary Science, and the Santa Barbara Museum of Natural History have had a 'Joint Use Agreement' since 1976. We share facilities at the Museum including the Planetarium and the Observatory for all our Astronomy lab classes. The past few years we have been particularly interactive with the museum as we coordinate the upgrading of equipment storage facilities, installation of a new astronomy dome (donated), and the eventual installation of a high quality integrated telescope (donated).
- * The Astronomy program offers numerous student and community outreach events, such as star parties, solar observations, eclipse viewings, and goes to local primary and secondary schools to offer talks, guest lectures, and demonstrations.
- * The Astronomy Club assists the SB Museum of Natural History with Star Parties and special public events.
- * The Astronomy faculty has a long history of being a point of contact for local media when there is an astronomical event of public interest.

- * The Geography club participates in environmental clean up, outreach in Isla Vista, community building through social gatherings and hikes, documentary viewing, community outreach through participating in the local organizations Pacific Pride, the Unity Shoppe, Beach Angels, and Isla Vista Parks and Recreation. The Geography club also organizes field trips to GIS events and conferences.
- * The Energy and Natural Resources class (ERTH/ENVS 116) is currently (F17) working with Alelia Parenteau, the City of Santa Barbara Energy Analyst, to provide suggestions for transitioning to 100% carbon-free electricity use in Santa Barbara by 2030.

Collaborative efforts with Business & Industry:

- * The Geology faculty & staff participate in the Coast Geologic Society as members, guest speakers, publishers for the field trips, and other related society activities.
- * The EPS faculty and staff participate in activities with professional groups such as API (American Petroleum Institute), AAPG (American Association of Petroleum Geologists), NAGT (National Association of Geoscience Teachers), and the CIRGIS (Channel Islands Region GIS) consortium.
- * The EPS faculty & staff have taken our students to conferences and symposiums by professional groups (listed above), and had them volunteer and provide support during these events.
- * The Coast Geologic Society and API provide scholarships for our students.
- * The Geology students initiated a student chapter of the AAPG.
- * The Geology faculty and staff, in conjunction with the Vandenberg Air Force Base Office of Cultural Resource Affairs, have undergone reconnaissance, recovery, and removal of any paleontological artifacts found on the base. Our department provides the repository for these artifacts and our students have an opportunity to assist in the curation of specimens.
- * The Geology faculty and staff collaborated with Venoco, the UCSB Center for Crustal Studies, and local artist John Iwerks to create and produce a scientifically-accurate geologic cross-sectional mural of the Santa Barbara Channel.
- * EPS faculty offers an annual field trip to NASA's Jet Propulsion Laboratory on which students in the department and members of the Astronomy club visit various public areas and other areas not open to the general public.

7. Recommendations for Improving the Effectiveness of the Program Review Procedure

1. List suggestions for changes that will make the program review process more helpful to your department. Do a thorough evaluation of what exactly is needed and used from this Program Review Procedure, with an eye for streamlining the procedure and reducing the burden to faculty and staff in the future.

8. Program Review Template: Goals

List your unit's major goals and related objectives for the upcoming year. List one goal per row. Add new rows for goals as required. If not clear in your table, detail if and how you met the goals and objectives you set in the prior year.

Major Goals & Objectives for Unit

Priority	Goal	Links to College Goals & Plans College Plan 2009-2012 Dist. Technology Plan 2009-2012	Office/Person Responsible for Completion	Objective	Anticipated Completion/Measure of Success	Status	Comment
	Increase the number and variety of Earth and Planetary Sciences courses, in response to student demand/need.		EPS Dept. Chair, in consultation with department faculty.	1. Add advanced astronomy lab courses. 2. Add math-based introductory astrophysics class. 3. Add an online Human Geography course. 4. Add sections of Physical Geography and Environmental Geology to meet student demand.	1. Advanced astronomy lab courses will be available for students in the course catalog. 2. Introductory astrophysics will be available for students in the course catalog. 3. A fully online Human Geography course will be available for students in the	1. Complete 2. Complete 3. Complete 4. Complete	1. We added EARTH 103 A, B, and C, which are the advanced astronomy labs for the Fall, Spring and Summer. 2. We successfully added EARTH 104, Introductory Astrophysics and it satisfies

					<p>course catalog. 4. All students seeking to add Physical Geography and Environmental Geology labs will be accommodated.</p>		<p>area 5A of IGETC and Area B1 of CSU GE. 3. We have added an online Human Geography. 4. We have added additional sections of Physical Geography lab and Environmental Geology lab.</p>
	<p>Maintain high quality lecture, laboratory and field education in the Earth and Planetary Sciences.</p>		<p>EPS Dept. Chair, in consultation with department faculty.</p>	<p>1. Create maintenance calendar for field equipment. 2. Review new equipment/technology for possible inclusion in Earth Science laboratories.</p>	<p>1. Calendar includes all major equipment and their maintenance intervals. 2. Annual review of equipment use in Earth Science laboratories.</p>	<p>1. Complete 2. In Progress</p>	<p>1. Kevin McNichol has a comprehensive inventory for field trips including the regular maintenance needed for them. 2. We continue to do this through professional development, course updates, and new/updated equipment.</p>
	<p>Continue to provide high quality outreach and demo equipment for the EPS department and our students.</p>		<p>EPS Dept. Chair, in consultation with department faculty and staff.</p>	<p>1. Investigate new demonstration ideas. 2. Maintain and improve equipment.</p>	<p>1. Regularly review the literature and state of the art in EPS programs. 2. Equipment is in good repair and fully capable of the task it is used for.</p>	<p>1. In Progress 2. In Progress</p>	<p>1. In 2016 we built a state of the art "sandbox" topography display for labs and outreach. 2. We have updated the microscope illuminators for mineralogy class.</p>
	<p>Sustain field program at current levels (both number of field course offerings, plus enrollment numbers), and provide lab preparation support for earth science labs.</p>		<p>Bill Dinklage</p>	<p>1. Continue to offer our 5-day field courses (ERTH 131/132), the Colorado Plateau field course (ERTH 133), the Western Sierra field course (ERTH 134), and the six-week summer field course series (ERTH 137 & 138) 2. Maintain enrollments of 60+ in 5-day field courses (ERTH 131/132), fill the Colorado Plateau (ERTH 133) and</p>	<p>1. Maintain a spreadsheet of when field courses were offered or find a way to pull up this information in Tableau. 2. Monitor enrollments for the courses listed in objectives 1 and 2, and either find a way to track these numbers in Tableau or keep our own departmental spreadsheet of enrollments for</p>	<p>1. In Progress 2. In Progress 3. In Progress 4. In Progress 5. In Progress</p>	<p>1. To meet goal #1, just keep offering the courses, and ensure that enrollments are high enough to continue justifying offering them (see (2)). 2. To meet goal #2, we will Recruit heavily from our introductory geology and physical</p>

<p>Western Sierra field course (ERTH 134) each time they are offered, and maintain a minimum of 18 students in the six-week summer field course series (ERTH 137 & 138)</p> <p>3. Increase enrollment in ERTH 125B and ERTH 126B</p> <p>4. Ensure that pedagogical support and logistical support is available for all field courses listed above</p> <p>5. Ensure that pedagogical and large equipment support is available for labs ERTH 111L, ERTH 112L, ERTH/ENVS 115L, ERTH 141L, ERTH 151L</p>	<p>tracking.</p> <p>3. Achieve enrollments of 24 students in ERTH 125A&B combined and in ERTH 126A&B combined.</p> <p>4. Our lab tech provides our pedagogical support and our field tech our logistical support. Instructors will be aware when support is lacking and will initiate a conversation with the respective tech about what can be done if improvement is needed.</p> <p>5. Our lab tech provides our pedagogical support and our field tech our large equipment support. Instructors will be aware when support is lacking and will initiate a conversation with the respective tech about what can be done if improvement is needed.</p>	<p>geography courses. Increase recruitment from our introductory astronomy courses as needed and streamline the co-requisite challenge quiz, which is needed for intro astronomy students. Continue our recently added practice of “tabling” for the courses outside the EBS building. This involves our lab tech setting up a recruiting table to catch students who might be thinking about the trips but who are still on the fence.</p> <p>3. To meet goal #3, we will Be more proactive in talking about these courses on the first-year five-day field courses (ERTH 131, 132). Spread the word in our department through GeoBlurb e-mails, Geo Club announcements, and talking to students in “the core” about the value of these opportunities.</p> <p>4. To meet goals 4 and 5: (1) pay attention to the days worked our lab tech and field tech are accumulating through the year so as to ensure they have enough days remaining in the summer and fall</p>
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							to take “comp time”; and (2) instructors will maintain close working relationships with the lab and field techs. 5.
	Improve the advising program for majors in the department.		EPS faculty and Staff	<ol style="list-style-type: none"> 1. Create a database to store information on past and current students that will allow easy access to this information. 2. Develop a mechanism to systematically add graduating student information to the new database. 3. Increase the amount and quality of information on past graduates and their journey after SBCC. 	<ol style="list-style-type: none"> 1. All of the EPS instructors and support staff should be able to easily access information pertaining to past and current students 2. All current graduating majors information will be readily accessible to EPS faculty and staff. 3. Each year, we hope to contact 20% of the former graduates with the hope of having a complete data set within five years. 	<ol style="list-style-type: none"> 1. In Progress 2. In Progress 3. In Progress 	<ol style="list-style-type: none"> 1. Currently the department has a binder which has information from some students. It is a useful tool already. We have not systematically added to it. 2. We will begin by asking graduating students to voluntarily submit their information by electronic questionnaire. 3. Some former students are easier to contact, especially those that have graduated recently. We may wish to recruit retired faculty to help track down former students.
	To become a more inclusive department that attracts students to better reflect the greater diversity of the SBCC campus.		EPS faculty	<ol style="list-style-type: none"> 1. Increase our department’s presence in Mesa and continue the presence in STP/STEM. 2. Create a mechanism to guide promise scholars toward a pathway in the Earth and Planetary Sciences. 3. Recruit College Promise scholars into the Earth and Planetary Sciences. 	<ol style="list-style-type: none"> 1. Faculty will take a more active role in by participating in the student advisement. 2. Committee will meet to discuss the concept of a Promise Scholar pathway in the Earth and Planetary Sciences. By the end of the first year the committee will advise the department on a plan for the following year. 3. At least one College Promise scholar will be recruited to become a major in the Earth and Planetary 	<ol style="list-style-type: none"> 1. In Progress 2. In Progress 3. In Progress 	<ol style="list-style-type: none"> 1. Stephanie Mendes is a faculty advisor for the student organizations (SACNAS). Dr. Mendes is also active at Mesa functions and in small group meetings designed to encourage student participation. 2. Recruit members of the department but also consider recruiting others at SBCC that might help us develop a concrete plan.

					Sciences Department.		3. Collaborate with Luis Giraldo the SBCC Equity director to communicate with the Promise Scholars and introduce them to pathways in the Earth and Planetary Sciences.
	Develop a training program for astronomy lab instructors.		Sean Kelly, Erin O'Connor	<ol style="list-style-type: none"> 1. Create a training manual outlining best practices. 2. Provide a comprehensive syllabus to correlate with SLOs. 3. Create training videos for technology and equipment used in the lab. 	<ol style="list-style-type: none"> 1. All new and current instructors have a copy or direct access to the training manual. 2. All new and current instructors have a copy or direct access to the comprehensive syllabus. 3. At least one new training video created per semester, with an ultimate goal of a library of at least 16 videos. 	<ol style="list-style-type: none"> 1. In Progress 2. In Progress 3. In Progress 	<ol style="list-style-type: none"> 1. Erin O'Connor has been training instructors for a long time, and Sean Kelly for a shorter time. We plan on distilling the key information and recording it in a usable form, especially for new instructors. 2. Erin O'Connor has already created a rough outline of the course several times. Sean Kelly has created a rough outline as well. We will work on creating a more polished version for each season of the year and on ways to share the information with the other instructors. 3. Sean Kelly has recorded some raw video, but it still needs to be processed. Adding one new video per semester seems like a reasonable, but not overly ambitious objective.
	Offer opportunities for students to engage in Geography-related		Michael Robinson	<ol style="list-style-type: none"> 1. Identify potential field trip locations and/or guest lecturers that relate to individual courses as well as the greater 	<ol style="list-style-type: none"> 1. 1-3 field trips per year, in addition to any already offered. 2. Connections between students and potential 	<ol style="list-style-type: none"> 1. In Progress 2. In Progress 	<ol style="list-style-type: none"> 1. Contact potential field trip sites, such as maps.com, Direct Relief International,

	academic and industry activities.			Geography program. Offer value-added field trips for individual courses, the Geography club, and interested students. 2. Connect interested students with academic and industry contacts.	academic/industry contacts.	UCSB Geography, and the National Weather Service. Publicize to classes and the Geography club, as appropriate, and encourage student participation. 2. As students express interest in a topic or area, connect them with known contacts, or seek new contacts in those areas.

9. Program Review Template: Staff

Staff Needs: List/summarize the needs of your unit below. List one position per line. Add new lines for positions as required.

In the description box, please note to which objective(s) from the Goals template the need relates.

Staff Needs

No data found.

10. Program Review Template: Faculty

Faculty Needs: List/summarize the needs of your unit below. List one position per line. Add new lines for positions as required.

Faculty Needs

No data found.

11. Program Review Template: TLU Augmentation

TLU Augmentation: List/summarize the needs of your unit below. List one TLU need per line. Add new lines for TLU needs as required.

TLU Needs

No data found.

12. Program Review Template: Equipment

Equipment Needs: List/summarize the needs of your unit below. List one equipment item per line. Add new lines for equipment as required.

Technology items (hardware and software) should be listed on the following pages, and not here.

Equipment Needs

No data found.

13. Program Review Template: Technology / Hardware

Technology / Hardware Needs: List/summarize the needs of your unit below. List one hardware item per line. Add new lines for hardware as required.

Technology / Hardware Needs

No data found.

14. Program Review Template: Technology / Software

Technology / Software Needs: List/summarize the needs of your unit below. List one software item per line. Add new lines for software as required.

Technology / Software Needs

No data found.

15. Program Review Template: Facilities

Facilities Needs: List/summarize the needs of your unit below. List one position per line. Add new lines for positions as required.

Facilities Needs

No data found.

16. Program Review Template: Service Needs

Service Request Needs: List/summarize the service needs (Institutional Research, Marketing, Technical Training, etc.) of your unit below.

List one request per line. Add new lines for requests as required.

Category	Description

17. Program Review Template: Other Needs

Other Needs: List/summarize the other needs (Duplication, Supplies, Travel, etc.) of your unit below.

List one request per line. Add new lines for requests as required.

Category	Description	Cost
Other	Supplies money to reimburse guest speaker lunches, \$480 (\$40 x 2, for each full time faculty member)	\$