



## Annual Integrated Planning Science for 2026-2027

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### **Describe Department/Unit**

#### **Connection to College Mission**

The mission of the Science Department is to provide the rigorous science foundation necessary for students to achieve the skills, knowledge, intellectual curiosity, and scientific literacy essential for a wide range of professional, technical, and academic careers. For students pursuing careers outside of science, an understanding of the processes and an appreciation for science is provided. The department mission supports the mission of the district and college by striving to provide excellent educational programs, services, and opportunities for transfer and CTE students.

### **Report on Improvements Made and Gaps Identified in the Prior Year**

#### **Student Equity**

#### **Actions Taken**

A placement exam was given in sections of CHEM C111 taught by the full-time faculty member. The purpose of this assessment was to gauge student preparation. Overall, students are generally not adequately prepared for the course. Students are given recommendations based on their score on the placement exam. The suggestions include brushing up on algebra, planning to engage with tutoring or other supplementary instruction methods, or a suggestion for students to take Chem C101 first.

In biology courses, students were asked to share more about themselves with their peers as an icebreaker-type activity to help students develop feelings of belonging and relatedness.

## **Gaps Identified**

PHSC courses did exhibit potential areas for focus: African American, Native American, and Hispanic/Latino students were disproportionately impacted, as were first-generation and economically disadvantaged students.

CHEM remains a difficult subject for students to succeed with success rates of 76%. However, this rate is higher than it was last year (73%).

BIOL remains a difficult subject for students to succeed with a success rate of 83%. However, this rate is higher than it was last year (78%).

## **Outcomes Assessment**

### **Loop-Back Improvements Made**

SLOs were not assessed.

### **Schedule of Assessments**

#### **BIOL C101 Concepts of Biology Lecture (Effective Fall 2022)**

Will Assess This Year

#### **BIOL C105 Concepts of Biology (Effective Fall 2022)**

Will Assess This Year

#### **BIOL C105H Concepts of Biology: Honors (Effective Fall 2022)**

Will Assess This Year

#### **BIOL C111 General Biology I (Effective Fall 2025)**

Will Assess This Year

#### **BIOL C111H General Biology I: Honors (Effective Fall 2025)**

Will Assess This Year

#### **BIOL C112 General Biology II (Effective Spring 2022)**

Will Assess This Year

#### **BIOL C112H General Biology II: Honors (Effective Spring 2022)**

Will Assess This Year

#### **BIOL C121 Survey of Anatomy and Physiology Lecture (Effective Fall 2022)**

Will Assess This Year

**BIOL C125 Survey of Anatomy and Physiology (Effective Fall 2022)**

Will Assess This Year

**BIOL C141 Environmental Studies Lecture (Effective Fall 2013)**

Will Assess This Year

**BIOL C145 Environmental Studies (Effective Fall 2013)**

Will Assess This Year

**BIOL C251 Human Anatomy (Effective Spring 2022)**

Will Assess This Year

**BIOL C255 Human Physiology (Effective Spring 2022)**

Will Assess This Year

**BIOL C262 General Microbiology (Effective Spring 2022)**

Will Assess This Year

**CHEM C101 Introduction to Chemistry (Effective Fall 2018)**

Will Assess This Year

**CHEM C111 General Chemistry I (Effective Fall 2024)**

Will Assess This Year

**CHEM C113 General Chemistry II (Effective Spring 2025)**

Will Assess This Year

**CHEM C113H General Chemistry II: Honors (Effective Spring 2025)**

Will Assess This Year

**CHEM C221 Organic Chemistry I (Effective Summer 2023)**

Will Assess This Year

**CHEM C223 Organic Chemistry II (Effective Spring 2022)**

Will Assess This Year

**CHEM C223H Organic Chemistry II: Honors (Effective Spring 2022)**

Will Assess This Year

**GEOG C101 Physical Geography Lecture (Effective Fall 2013)**

Will Assess This Year

**GEOG C111 Physical Geography (Effective Fall 2013)**

Not Due to Be Assessed This Year or Last Year

**GEOL C111 Physical Geology (Effective Fall 2013)**

Will Assess This Year

**PHSC C101 General Earth Sciences (Effective Fall 2018)**

Will Assess This Year

**PHSC C105 General Earth Sciences (Effective Spring 2018)**

Will Assess This Year

**PHSC C111 Physical Science Lecture (Effective Spring 2018)**

Not Due to Be Assessed This Year or Last Year

**PHSC C115 Physical Science (Effective Fall 2013)**

Not Due to Be Assessed This Year or Last Year

**PHSC C121 Astronomy Lecture (Effective Spring 2018)**

Not Due to Be Assessed This Year or Last Year

**PHSC C125 Astronomy (Effective Fall 2013)**

Will Assess This Year

**PHSC C131 Introduction to Meteorology Lecture (Effective Fall 2013)**

Not Due to Be Assessed This Year or Last Year

**PHSC C132 Intro Meteorology Laboratory (Effective Fall 2013)**

Not Due to Be Assessed This Year or Last Year

**PHSC C135 Introduction to Meteorology (Effective Fall 2020)**

Not Due to Be Assessed This Year or Last Year

**PHYS C111 Mechanics (Effective Fall 2013)**

Will Assess This Year

**PHYS C113 Electricity and Magnetism (Effective Fall 2013)**

Will Assess This Year

**PHYS C211 Waves, Optics, and Modern Physics (Effective Fall 2013)**

Will Assess This Year

**Outcomes Assessment: Results of Last Year's Assessments****Outcomes Assessment: Missed Targets****Program Review****Name: General Sciences****Year of Last Program Review**

2023

## **Actions Taken in the Prior Year to Address Strategies**

Organic Chemistry I and II (Chem C221 and C223/H) have been added to the LTS to be offered every year instead of every other year.

## **Strategies Still to be Addressed**

Updating CORs for introductory courses (PHSC C101/C105, GEOL C111) to be offered online and/or in a hybrid manner.

## **Last Year's Initiatives**

### **Name: Reclassify or Replace the Science department's current "Lab Tech I" position**

#### **Action Plan**

A reclassification request for the Science department's "Lab Tech I" position was included in the Science department's 2023-2024 AUP. Since then, the reclassification request was denied.

The goal was to reclassify the Science department's current "Lab Tech I" position to a "Lab & Safety Coordinator" position.

Without the reclassification, the department will need to replace the current single "Lab Tech I" position with both a "Lab Tech I" and a "Lab/Safety Tech" position. These two positions are needed to align the contract language with the job's actual responsibilities. The "Lab Tech I" position would cover generic lab responsibilities, while the "Lab/Safety Tech" would cover chemistry responsibilities.

#### **Lead Measure of Success**

The current "Lab Tech I" employee plans to leave the position. To align the contract language with the job's actual responsibilities, both a "Lab Tech I" and a "Lab/Safety Tech" must be hired. The "Lab Tech I" position would cover generic lab responsibilities, while the "Lab/Safety Tech" would cover chemistry responsibilities.

#### **Lag Measure of Success**

This initiative will be successful when both a "Lab Tech I" and a "Lab/Safety Tech" are hired.

## **Initiative Status**

Completed

## **Summarize actions taken on this initiative**

A Lab/Safety Tech reclassification was approved.

## **Name: Help Transition a New Department Chair**

### **Action Plan**

When the current department chair steps down, a new department chair will be elected. During the transition, the current department chair will help the new department chair.

### **Lead Measure of Success**

A new department chair is elected. The current department chair helps the new chair when needed.

### **Lag Measure of Success**

The department has a new department chair who is independently functioning.

## **Initiative Status**

Completed

## **Name: Help the Library Build an Online Reserve of Science Textbooks**

### **Action Plan**

The Library is currently building an online reserve of scanned textbooks. These scanned textbooks can be accessed online by students, which reduces their textbook costs to zero. Faculty in the Science department will work with the Library to build the online reserve of scanned science textbooks.

### **Lead Measure of Success**

Faculty in the Science department are working with the Library to build the online reserve of scanned science textbooks.

## **Lag Measure of Success**

The Science department's courses have their textbooks available in the Library's online reserve of textbooks.

## **Initiative Status**

In Progress

## **Summarize actions taken on this initiative**

Some courses, but not all, have scanned science texts.

## **Initiatives for Next Academic Year**

### **Update CORs for CCN**

**Is this a multi-year Initiative?** Y

### **Specific Action Steps to be Taken**

Discipline expert faculty should take applicable courses through the curriculum review process to align with the common course numbering system.

### **Early Observational Data, or "Lead" Measure(s)**

Number of completed CORs

**Do you request help developing these instruments?** N

### **Institutional Performance Data, or "Lag" Measure(s)**

#### **Person Responsible**

Science faculty

#### **What unit gap or institutional goal does this address?**

Other. Explain below

Compliance with ed. code.

### **Expand geology offerings - continued**

**Is this a multi-year Initiative?** Y

### **Specific Action Steps to be Taken**

Offer GEOL courses at the IWV campus and Tehachapi campus.

Hire GEOL faculty as needed.

Purchase/maintain supplies necessary for geology labs.

### **Early Observational Data, or "Lead" Measure(s)**

Student enrollments in geology courses.

### **Do you request help developing these instruments?**

### **Institutional Performance Data, or "Lag" Measure(s)**

Course completion rates, success rates, program completion rates.

### **Person Responsible**

Alex Gilewski

### **What unit gap or institutional goal does this address?**

It addresses a strategic plan goal or objective

### **Expand offerings at EK**

### **Is this a multi-year Initiative? Y**

### **Specific Action Steps to be Taken**

Examine for which course(s) modular facilities are sufficient for conducting labs safely.

Purchase materials necessary for safe storage of chemical and/or biological supplies, microscopes, incubators, autoclaves, and fridges/freezers.

Offer BIOL C125, C251, C255, and/or C262 if the facilities are conducive to safely conducting them.

Offer CHEM C101 if the facilities are conducive to safely conducting it.

Examine if there is a demand to offer CHEM C111. If so, offer it, assuming facilities are safe and conducive.

Offer GEOL C111.

Hire faculty as needed.

**Early Observational Data, or "Lead" Measure(s)**

Student enrollments in science courses offered

**Do you request help developing these instruments? N**

**Institutional Performance Data, or "Lag" Measure(s)**

Course completion, success rates at EK.

**Person Responsible**

**What unit gap or institutional goal does this address?**

It addresses a strategic plan goal or objective

**Requested Resources**

**#62 Other Needs: A&P in Tehachapi**

**Is this a one-time request or an on-going request?** Ongoing

**Amount Requested** 7500

**Is this request supported in your initiatives or elsewhere?** Yes

Expanding offerings in EK initiative.

**Description/Explanation**

We are looking to offer more biology courses, namely anatomy and physiology, in Tehachapi.

**Supporting Facts/Data**

We need consumables for anatomy and physiology labs. These include specimens for dissection, microscope slides and stains, chemical solutions, water baths, and general supplies. For comparison, we have use a budget of around \$10,000 for two semesters of A&P at IWV.

**Impact on the Department/Unit**

These supplies are essential for teaching the curricula of BIOL C251 and C255. Both have a laboratory component which will require consumable supplies.

## **Impact on Operational Efficiency**

Offering these courses should boost overall enrollment at the college. There is demand in the area for additional A&P sections. These supplies will more than pay for themselves.

### **#63 Facilities: Fume Hood for IWV**

**Is this a one-time request or an on-going request?** One-Time

**Amount Requested** 20000

**Is this request supported in your initiatives or elsewhere?**

None

The request is supported by enrollment data. Chemistry enrollment has drastically increased. We need an additional fume hood to allow more students to conduct experiments without waiting around for one to become available. We currently have four fume hoods in our hood room that allow about 2 groups of students each at a time. Certain experiments have students work in them only at certain times, and other experiments are conducted entirely within fume hoods.

### **Description/Explanation**

The request is supported by enrollment data. Chemistry enrollment has drastically increased. We need an additional fume hood to allow more students to conduct experiments without waiting around for one to become available. We currently have four fume hoods in our hood room that allow about 2 groups of students each at a time. Certain experiments have students work in them only at certain times, and other experiments are conducted entirely within fume hoods. General chemistry II and organic chemistry courses in particular require fume hoods for most experiments. These funds would allow for the purchase of the fume hood itself as well as installation by fume hood professionals. Hookups to ducting, water, gas, and drainage are already installed.

### **Supporting Facts/Data**

Notably, we already have venting, gas lines, water lines, and drainage pipes already installed in a location ready to be hooked up to a fume hood. This purchase/installation would take advantage of these existing features which are currently unused. When in use, the

fume hood room is a high-traffic area, and installing another hood will increase the capacity of students running experiments in them by 25%. In the works is a chemistry course designed for allied health students, half the curriculum of which are organic/biochemistry topics. Labs for these topics will require fume hoods.

### **Impact on the Department/Unit**

Having an additional fume hood will allow us to increase the number of students completing certain laboratory exercises at a time. As a result, students can complete more thorough experiments if they have additional space. Fume hoods are an essential component of any chemistry laboratory. Our mission is to prepare students for more advanced coursework as well as for industry. Students who have more experience working in hoods will have an advantage when completing higher level chemistry/biochemistry coursework or when engaging in chemistry research at institutions to which they transfer.

### **Impact on Operational Efficiency**

Notably, we already have venting, gas lines, water lines, and drainage pipes already installed in a location ready to be hooked up to a fume hood. This purchase/installation would take advantage of these existing features which are currently unused. Once installed, built-in fume hoods require only annual inspection and come pre-loaded with sensors to alert if air flow is too low.

## **#64 Facilities: Tehachapi Furnishings**

**Is this a one-time request or an on-going request?** One-Time

**Amount Requested** 140000

**Is this request supported in your initiatives or elsewhere?**

None

Expanding offerings in EK initiative.

### **Description/Explanation**

These funds would be used to purchase big-ticket equipment for offering more advanced biology coursework, notably anatomy, physiology, and microbiology. Additionally, there are supplies for chemistry.

For biology courses, we request two fridges, one freezer, one biology storage cabinet, two incubators, 30 sets of anatomy models, and 6 additional microscopes.

For chemistry courses, we request a chemical fridge, a flammable cabinet, an acid cabinet, a corrosive cabinet, a cabinet for general solutions, an oven, 15 heat/stir plates, and 2 analytical balances.

### **Supporting Facts/Data**

These supplies are used to safely and securely store consumables for biology and chemistry courses. We have 10 microscopes currently in Tehachapi, but we will need more to offer full 32-seat sections of anatomy, physiology, and microbiology. We currently do not offer these courses at EK, so we do not have most of these larger pieces of equipment already. It is our hope to begin offering BIOL C125 in the fall of 2026 and expanding to full anatomy and physiology courses if the facilities are sufficient.

### **Impact on the Department/Unit**

There is demand for these pre-nursing courses. By expanding our offerings, we should be able to recruit and maintain additional students. These pieces of equipment are necessary to run the courses with the necessary supplies -- specimens for anatomical dissection must be kept cold until they are used, bacteria for microbiology must be grown in incubators, and hazardous chemicals must be stored properly.

### **Impact on Operational Efficiency**

These are one-time purchases which will allow us to offer anatomy, physiology, microbiology, and chemistry courses for years to come.

## **Faculty Position Requests**

### **Chemistry**

#### **Locations**

Ridgecrest/IWV

## **Justification**

1. Chemistry courses required for non-science majors have high enrollment. Indeed, CHEM C111 is the only course at the Ridgecrest campus to consistently have over 50 students in one lecture, with additional students waiting to take the course. Chemistry enrollment increased by 80% in the past year, likely as a result of prerequisite changes (Chem C101 is now a prereq for Chem C111).
2. Cerro Coso currently has only one full-time faculty member qualified to teach chemistry, which is insufficient to meet both the present and growing demands of the department. The chemistry program offers five courses, two of which include honors sections, and per the faculty contract, a full-time instructor can only be responsible for a maximum of three different course preparations per semester. However, in the spring, the chemistry department is scheduled to offer Chem C101, C111, C113, C113H, C223, and C223H—well beyond the allowable workload for a single faculty member. Additionally, the existing faculty member is developing a new general, organic, and biological chemistry course tailored for allied health majors, which will further increase the course offerings. Given these factors, the current reliance on adjunct faculty is unsustainable and does not meet the academic standards set by AB1725, which requires that 75% of course offerings be taught by full-time instructors. Moreover, recent changes to C-ID requirements have made Chem C101 a prerequisite for Chem C111, the largest course by lecture capacity and one of the college's highest FTES per instructor contact hour. This change has significantly increased the demand for Chem C101 sections, which are already near capacity. Since Chem C111 is a requirement for many Cerro Coso programs and transfer pathways, including those in health, STEM, and allied fields, this shift will necessitate additional faculty support to accommodate the influx of students. In terms of enrollment patterns, lower-level chemistry courses (C101 and C111) regularly reach capacity and have waitlists, while higher-level courses such as C113 and C223 experience lower enrollment. This disparity, however, does not diminish the need for organic chemistry, as it remains a requirement for students pursuing degrees in biology, chemistry, biochemistry, and

chemical engineering, as well as those seeking to fulfill major prerequisites for transfer. Without additional full-time faculty, Cerro Coso risks not only failing to meet student demand but also compromising the quality and continuity of instruction in critical STEM fields.

Growth in the science department is indicated in both the Educational Master Plan and the General Sciences Program Review.

To ensure the continued growth and success of the chemistry department, meet institutional and statewide teaching standards, and maintain high-quality student outcomes, hiring an additional full-time chemistry faculty member is imperative.

3. Chemistry courses are core mission.

4. The current full-time chemistry faculty member has been at Cerro Coso since 2020. In that time, the instructor has been overloaded every semester. The college has had FTEF values of 2.0-2.7 for chemistry during the years the current full-time instructor has been employed. The chemistry faculty member is currently the department chair, and with the release time allotted for chair duties, the faculty member will be even further overloaded in coming semesters. Chemistry offerings are difficult to staff; they are high contact-hour courses, and per CA law, adjunct faculty cannot be assigned more than one course without exceeding 67% of a full-time load. Further, adjunct faculty are difficult to source in Ridgecrest, with the majority of the (few) applicants in the adjunct pool seeking online or remote teaching opportunities, which are not possible for chemistry courses, as they require in-person labs. Finally, for safety purposes, labs should be run during the daytime under the purview of our lab safety coordinator. This further limits the availability of adjunct instructors. Again, the department must expand to meet student need with changes to C-ID and development of additional courses. Science courses cannot be offered fully online, thereby severely limiting the availability of adjunct instructors further.

5. There is currently available lab space to hold additional courses. Currently, only one lecture offering is available each

semester for Chem C111, which limits the amount of students who can enroll due to scheduling conflicts. Chemistry courses all have 3-hour labs, which means students must have clear schedules for significant portions of multiple days of the week. By expanding the number of sections, students who would be otherwise unable to attend one section due to scheduling conflicts may now be able to enroll in another offering.

6. There is a national deficit of STEM graduates. Locally, there is a need for healthcare workers, veterinary workers, and physicians, all of whom require chemistry.

7. It is difficult to project costs/lost revenue. However, at least two students in the 2024-2025 year will not be able to graduate with degrees in general sciences - chemistry focus due to a lack of course offerings. With new prerequisite requirements, the college should see a dramatic increase in students taking Chem C101. Without any available adjuncts, the college will not be able to offer more sections without drastically overloading the current full-time faculty member.

8a. Current wait lists are at 2-3 per section. However, this does not account for the in-development allied health chemistry course, nor does it account for the need for additional Chem C101 offerings.

b. c. 1

d. 2

e. 0

f. 0; this discipline does not have a discrete degree. General sciences, however, had 9 degrees awarded.

g. Chem C101, C111, C113/H, C221, C223/H

h. N/A

i. Headcount: 115; enrollment: 143; FTES: 33.3; FTEF: 3.3 (39% full-time, 59% adjunct, 2% overload).

## **Classified Position Requests**

No requests found.

## Science AUP Budget Request Worksheet for FY27