Comprehensive Program Review Report



Program Review - Chemistry

Program Summary

2022-2023

Prepared by: Julie Rodriguez, Teresa Mendoza, Ryan Froese, Jennifer Verissimo, and Chiara MacPherson What are the strengths of your area?: One of the strengths of our chemistry program is the partnerships that students build with the faculty members. Unlike large, impersonal introductory courses at many colleges and universities, the chemistry classes at COS have a maximum enrollment of 24 students. Small classes and labs make certain that students receive individualized attention and ensure greater success in chemistry; although to ensure this individualized attention for future years, an additional faculty member is needed. Our dedication to teaching and supporting student learning is another strength of the department. Our faculty collaborate often and work well together to construct a successful chemistry program. Our success in this area is evidenced by our course fill rates. We have observed fill rates ranging from 89–107% at census from 2018–2022.

The new institution-set standard is a minimum of 67% for course completion. Our average course success rates overall have been between 55-68% in the last three years, compared to 51-54% during the three years prior. We have worked hard to improve that metric by recruiting, training, and growing leaders who are working in the Math Engineering and Science Achievement (MESA) center. The data shows this, as there is a 20% improvement in the success rate for students in Chem 1 and Chem 12 who attend MESA versus the students who do not. These courses are each the first in their series, and therefore quite challenging for the students. In the 2021-2022 school year, the pass rate for Chem 1 increased to 63%, as compared to 50% for each of the two years prior. Chem 12 tells a similar story, with an average success rate of 82% over the last three years, compared to an average of 63% for the 2016 – 2019 school years. The organic chemistry (Chem 12) students who are taking their third or fourth chemistry course at COS, (depending on where they started), are exceeding the institution-set standard. Some of these students have reported back to us and are finding success in chemistry courses in both the CSU and UC system upon transfer. Another revealing fact from the data is found when comparing the total number of students who are taking our courses with the overall success rates (which exclude EWs). The average number of students who took chemistry in 2019 – 2022 was 957 students. In years 2016 – 2019, our department served an average of 828 students. The average number of students taking chemistry courses has increased by 129 students in the last three years. Our overall success rates in 2017 - 2022 were 51%, 54%, 54%, 55%, 68%, and 58% respectively. Our success rates have been mostly consistent over the past six years, with the exception of the 2020-2021 school year having a jump of over 10% in success. While that meets the standard for course completion, the 2020-2021 school year resulted in a greater number of students dropping their D or F grades using a Covid Withdrawal (CW) during the pandemic. This is a plausible explanation that would explain a heightened percentage of success during 2020-21. What is more noteworthy is that we have been able to serve more students and our pass rate is steadily increasing; therefore, more students are able to successfully complete the chemistry courses offered at COS.

We have been utilizing the MESA program as a method to raise success rates in chemistry. Students who apply for and are accepted into the MESA program are connected to tutoring resources, academic coaching, and professional development, which helps to build a community among cohorts of students. We believe community is one of the central factors in the MESA center's ability to increase student success and this is likely why we have seen our success rates of our Hispanic, African-American, and Asian population increase during the past year. Their success rates during the 2021-2022 school year were 59%, 52%, and 64%, up from averages of 46%, 47%, and 55% during the previous three years, respectively. Similar increases in success rates can be seen for our Hispanic students in Chem 10 and Chem 1, indicating that our utilization of the MESA program to assist these underrepresented groups is working to improve the equity gap. In addition to this, Julie Rodriguez, Teresa Mendoza, Ryan Froese, Jennifer Verissimo, and Chiara MacPherson are currently guiding students through a student-centered Supplemental Instruction (SI) program for their introductory, general chemistry, and organic chemistry courses. The SI sessions have been widely popular, well attended and shown marked improvement when all other variables (that can be controlled) remain

constant. One example pulled from data, Jennifer Verissimo's Chem 2 with an SI saw a 46% success increase and a 25% retention increase for students attending SI sessions. (This was during the spring of 2022). As an addendum, we also find that SI sessions build excellent community in the classrooms, and tend to aid in the formation of study groups.

Another two strengths in the Chemistry Department are the increase in the use of instrumentation, as well as the acquisition of instruments that are essential for students' university and career readiness. This was previously identified as a weakness, but our efforts have transformed it into a strength. The students in Organic Chemistry now utilize GC-MS, FT-IR, Polarimetry, and NMR instruments, giving them a better experience of what they would have in the same course at a 4-year institution. The unique individual instruction provided by staff in the use of this equipment accentuates this experience making it superior to any 4-year institution. Our students finish this our organic series ready for further study upon transfer, and/or work as a chemist in industry. Preparing our students for work in a high-tech field helps to fulfill the mission of the district, "to help our diverse student population achieve its transfer and/or occupational objectives and to advance the economic growth and global competitiveness of business and industry within our region." This brings our department into alignment with the institution as a whole, which amplifies our success. We like to think of this vertical alignment as the Chemistry Department metaphorically "rowing with the team." A recent student who was a chemistry major was accepted to the Chemistry Ph.D. program at Caltech and is thriving after the instruction he received from chemistry faculty at College of the Sequoias. In addition, another student was accepted to dental school and will be attending this fall.

We are continuing to look for ways to grow the Chemistry program out at the Tulare Center. The satellite campuses have been a challenging area in the past for our department, as there were no full-time faculty members to support these programs. In an effort to remedy this, we hired a new faculty member and our most senior faculty (Julie Rodriguez) moved out to Tulare to grow this program. This has allowed us to offer not one, but two major's courses at a Satellite campus for the first time in COS history. In addition, there is also a Chem 10 and three Chem 20 courses being taught on the Tulare Campus during the fall semester and a similar number of courses will be taught there in the spring. The Tulare Center has had fill rates ranging from 95–116 % at census from 2018- 2022. However, this growth is only possible now due to the presence of our additional full-time temporary faculty member. Given the demand for chemistry classes, we hope that we will be able to maintain our current course offerings by hiring a full time instructor who will teach at least part of their load out in Tulare so that the program continues to grow.

One effort we have made to increase success and retention is the creation of a new course. Many students need a lab science as part of their general education (GE) and have historically chosen Chem 20. Chem 20 is a course designed for Allied Health Majors as well as Science Majors beginning their chemistry series. Chem 253 was closer to the needs of the students using the course for general education, but it did not fulfill this requirement due to the lack of a laboratory component. For this reason, Julie Rodriguez wrote a Chem 10 course to fulfill the GE requirements for a physical science lab that was designed at the appropriate level. We hypothesized that the students in general education would be far more successful in this course than Chem 20, while still receiving what they need to prepare them for future courses and careers. Chem 10 has been taught during the 2019–2022 school years with success rates of 57%, 59%, and 70%, respectively. Chem 20 has had an average success rate of 58% for the past three years. Both courses have seen an increase in success rates in the past three years compared to previous years, indicating that students are able to complete their educational objectives in the course that is more tailored to their needs. What improvements are needed?: We are in need of a full-time faculty member in chemistry to maintain our current course offerings on both the Visalia and Tulare Campuses. We cannot seem to offer enough chemistry classes! At Census, on the Visalia campus, the chemistry department has had an average of 99% of the seats filled during the past four years. Many of the courses that we offer are waitlist-full before normal registration begins. All of our Chem 20 courses are usually full within a couple of weeks and this is causing a bottleneck for our majors program. In addition to full classes and full waitlists, in Chem 20 we observe about 5-7 people per section are trying to "crash" the class on the first day in hopes of enrolling in the course if a registered student drops. For this reason, we have added additional introductory chemistry courses and are now offering a record-breaking 16 Chem 20 courses and 3 Chem 10 courses this fall. We were beginning to see similar trends in our majors courses as well (due to more students taking and passing Chem 20) and have added both a Chem 1 and a Chem 2 this semester to meet student demand. Because enrollment is up in Chem 1 and 2, it is likely that we will need to add additional Chem 12 courses in the future as the program continues to grow. We think it is important to note that unlike other classes, we are unable to add extra students because our laboratory rooms will only hold 24 students. It poses a safety hazard to exceed this number, and we do not have the glassware to do so if we were so inclined. We currently have 5 adjunct faculty members covering 9 chemistry classes. In addition, our temporary full-time faculty member is teaching an overload of 21 units (one Chem 2 course and three Chem 20 courses). If we do not retain this full-time position, we will lose a majors course offering (Chem 2) and significantly decrease the number of Chem 20 courses that we are able to offer. In addition, the added majors course is being offered at night for the first time, which is allowing more non-traditional students to purse a major in the sciences; this aligns with the college's goal of increasing access to our majors courses for all students. So, even though this will be a growth position, we need another full-time faculty member to maintain our current course offerings and allow for equitable access to our majors courses. We would also like to move two more of our introductory courses out to the Tulare campus and have this new faculty

member teach part of their load on the Tulare campus. This way we will continue to expand the chemistry program on the Tulare campus.

Additionally, we are seeking funds for new equipment for use in our chemistry labs. Due to the increase in the number of courses being offered and in the number of students that are passing through our program, we have more chemistry students than we have ever had in the history of COS. This means that our equipment is being used more frequently and needs to be replaced when it begins to function improperly. We are requesting new heating mantles, centigram balances (including installation and calibration), hot plates with stirrers, and burets to replace broken equipment and to accommodate the additional students that we are serving.

We are also requesting funds for new laboratory chairs for use in the science labs of the John Muir building. The current chairs are quite old and many do not roll or function as well as they previously did. We would like to replace our current laboratory chairs with chairs that have roller casters on all feet of the chairs.

Describe any external opportunities or challenges.: The biggest challenge facing the department this year is the rapid growth that we are seeing in course demand. This is a wonderful challenge because more students taking Chem 20 means increased enrollment in our majors courses, which we are seeing across the board. We are offering a record-breaking number of Chem 20 (16) and Chem 10 (3) courses this semester. In addition, we are offering an additional Chem 1 course and Chem 2 course this fall and plan to continue our expanded course offerings in the spring. Furthermore, we are now offering majors courses in the evening, which we have never been able to do in the past. The added evening majors courses increase access to these classes for students who have families or full-time jobs and would otherwise be unable to take these courses. Our ability to increase the number of courses available to students is currently made possible by the addition of a full-time temporary position, and this individual is teaching an overload of 21 units. We need to convert the temporary position into a full-time position to maintain the number of courses currently being offered to students.

We strive to improve our success and retention without compromising our standards. We find this most challenging in our Chem 20 courses where we receive many students from local high schools who lack the skills necessary to succeed in a college-level chemistry course. The chemistry department is continually searching for ways to improve success in our Chem 20 courses. In an effort to improve success rates for some of our lower-level students, Ryan Froese will be writing a Chem 20 with support course this fall as his IIP. This course will use an atoms-first approach to allow students to receive the math support they need before approaching it in the chemistry portion of the class. The chemistry department is optimistic that this course will help to support students who historically struggle in chemistry due to insufficient mathematical skills. It is likely that the new faculty member would be teaching at least one section of this class in the future as our course offerings continue to expand.

The chemistry department utilizes technology in an effort to improve both the success rates in and access to our Chem 20 classes. Many students have jobs that make attending class 3-4 times per week impossible. In response to this issue, Teresa Mendoza and Jennifer Verissimo are currently teaching a total of four hybrid Chem 20 courses, where students can watch lectures on their own time and come to school only once a week to attend lab and/or take exams. To increase engagement for online students, Ryan Froese created chemical demonstration videos to give our online students some of the comparable engaging experiences that face-to-face students get. Additionally, the videos were shared with the chemistry department which especially helped to add more engaging experiences for students when classes were moved online in the spring of 2020. Surveys from the courses show the online format has helped to provide more access to students who would otherwise be unable to take the class. Many students had glowing reviews of the format, but many others wrote they struggled to succeed due to time management and their own procrastination. The online format makes this procrastination even more possible than usual and has exhibited lower success rates. Much of these lower success rates can also be explained by an increase in access; the students who can only take the online format also have busy lives that inhibit success. We need to continue to find ways to support these non-traditional students and raise the success rates of our hybrid courses to meet the success rates of our in-person courses.

For the past ten years COS STEM majors have benefited from experiences provided by the REALM and PASEO grants. The REALM grant recently concluded, closing the door on additional support for incoming STEM majors. The Biology department has initiated a request for above base funding for a new program called MESA+. The Chemistry department strongly endorses their petition. The MESA+ program would offer essential orientation events, giveaways, STEM academic counseling, and four community based events for the following year. The MESA+ program would be linked to the current MESA program which means students would receive a MESA membership and have access to MESA coaches and tutors. Funding is requested to support the new program as well as to move the part-time MESA coordinator position to a full-time position. A full-time coordinator is necessary to manage the extra responsibilities associated with the new program. The beneficial opportunities provided by the REALM grant are well documented with higher success and retention rates. The success data indicates that the MESA+ program (which is a truncated version of the REALM grant) would produce similar results. The data can be found in the

program review of the Biology department.

The MESA program is a contributor to the success of many STEM majors at COS; however, there is currently only a MESA presence on the Visalia campus. As we expand our course offerings, especially the majors courses, to the other campuses, it is vital that the MESA program expands along with it. In the past year, both Chem 1 and Chem 2 were taught on the Tulare campus, but there is not equitable access to the resources and community that there is on the Visalia campus. For this reason, many students still have to travel to the Visalia campus to receive tutoring and academic coaching, reducing the number of students willing to take classes in Tulare. In addition, for our students living in Pixley, Porterville, and other outer-lying areas, Visalia is a significant drive past Tulare and may not be feasible. Having a satellite MESA center on the Tulare campus would support STEM majors who are taking classes there, support the growth of the Tulare campus as a whole, and help provide access to resources for students in rural communities. If the satellite MESA center on the Tulare campus is successful, the chemistry department would hope to see it expanded to the Hanford campus in the future as the program continues to grow.

We need improved study spaces in the science department. Our students often reside in outlying areas, and commute in. Many of them also have home environments that are not conducive to study, and as such are need spaces in the science building to study in groups and individually. Sometimes they end up sitting in the hallways in between classes, trying to study or do homework on a chair borrowed from a classroom and stay out of the way of through foot traffic. SI sessions have had trouble finding spaces to meet due to high classroom utilization and the low-utilization computer rooms are not conducive to group work. The MESA center has helped with this need, but is often filled and quite busy with tutoring and being a single room can be a loud and overwhelming experience. Conveniently, we have also recently realized that two of our rooms are not being utilized efficiently (primarily as unused computer rooms and storage). We would like to remodel the rooms to create better student individual and group study spaces as well as more efficiently store lab equipment.

The chemistry department has been collaborating with Fresno State on a possible grant opportunity, called the Bridges to the Baccalaureate (B2B) program. The main concept of B2B is to mentor students, provide research opportunities, and assist them in transitioning to Fresno State, UC Merced, and UC Davis. If we receive this grant, students would be able to conduct research at COS, which is historically only done at four-year universities or during summer internships. In addition, a strong partnership with Fresno State, UC Merced, and UC Davis would likely increase the number of students who transfer to a university upon graduation from COS. The applications for this grant are due soon and we are optimistic that we will begin this collaboration in the near future.

Overall SLO Achievement: Our department is still filtering through large changes in the area of SLO's. After previously noting an absence of useful data from SLO's, we determined that the SLO's themselves were the culprits. We collaboratively constructed new SLO's, PLO's, designed new assessment methods and scheduled assessments. We are excited about the new SLO's and PLO's, as they align much better between courses and with the program as a whole. They also create much better goals for student achievement that align more closely with the mission of the district. Instead of a myopic focus on individual paper-based skills, they broaden the scope to conceptual connections, exhibiting deep awareness of the underlying principles of both chemistry and critical thinking. They also broaden the scope of our goals to laboratory-based skills, which prepare the students for their careers. We have some preliminary SLO data, though we still need to get through more cycles for it to gain statistical accuracy.

Preliminary Data: Teresa Mendoza calculated that Chem 1 and Chem 2 are showing the most promising results with 85.9% and 80.8% respectively as an average SLO achievement for each course. This far exceeds our goal and speaks to the quality of instruction provided in these courses. Chem 12 and 13 showed an average SLO achievement of 69.0% and 69.2% respectively. These numbers were not surprising as these courses are quite challenging regardless of the institution in which they are taught.

The SLOs that did not meet our goals were:

"Synthesis" and "Mechanisms" for both Chem 12 and Chem 13 under the Qualitative Analysis PLO.

"Laboratory" for Chem 13 under the Laboratory PLO.

"Laboratory" for Chem 13 under the Quantitative Analysis PLO.

Changes Based on SLO Achievement: Ryan Froese and Jennifer Verissimo are working to format Chem 12 and Chem 13 with more emphasis on higher-order thinking woven into the course's instruction to improve the SLOs regarding "Mechanism" and "Synthesis." This should bring the average SLOs up to the target range when they are assessed next. We believe that the SLOs that were not met in Chem 12 and 13 were because of the COVID pandemic in 2020 as well as a lack of lab instrumentation. The "Laboratory" SLO for Chem 13 was not met largely due to the cancellation of the lab practical due to COVID in the spring 2020 semester. We have also included the part-time faculty in the SLO process to some degree and are incorporating their data to

develop a more complete image of the department as a whole. We have much growth needed in this area and would like to include adjunct faculty in our SLO data beyond simply incorporating their data.

Overall PLO Achievement: Jennifer Verissimo mapped our course SLO's to our newly created PLO's in the new Chemistry AS-T and Teresa Mendoza tabulated the data. Any course that met the SLO goal we have set was counted as achieved. Our PLO's were as follows:

Quantitative Analysis: 3 SLO's met of 4 SLO's mapped to this PLO.

Qualitative Analysis: 4 SLO's met of 8 SLO's mapped to this PLO.

Laboratory Skills: 3 SLO's met of 4 SLO's mapped to this PLO.

Changes Based on PLO Achievement: From this data, we have begun to discuss the incorporation of more critical thinking in the form of qualitative questioning in the program from the outset. To address the Chem 12/13 "Synthesis" and "Mechanisms" SLOs, we have resumed discussions on how to increase the Brigg's level in previous courses by requiring students to answer more questions involving "Synthesis or Creation". This may better prepare students for the level of this expectation in Chem 12. We predict that the next PLO assessment will improve as we are now back to offering more in person classes after an online stint. We have also considered giving the ACS exam as a final for some of our courses so that we can compare our students' achievements with students across the nation. Finally, would like to further incorporate our adjunct instructors in the SLO discussion process and the workings of our department in general.

Outcome cycle evaluation: This year we have done some major work on our program. We used last year's cycle data to launch some major program overhaul, as well as start discussions of the next steps. The hard work of our department faculty is evident from the following bird's eye view of our changes. We created new SLO's/PLO's to present students with a more cohesive program, and glean more relevant data. From the transformation of our SLO's/PLO's, we realized that Chem 253 was not meeting the needs of our students. We redesigned it to do so and is now known as Chem 10. This was also in response to the qualitative data showing Chem 20 contained many misplaced students, who now benefit from this new course. We also teach a Chem 20 hybrid course to meet the needs of working students, and students who are family caregivers. We are in the process of designing a Chem 20 course with support to mitigate our student's poor mathematical skills and help to increase our overall success rates in the course. We will continue discussions and efforts to increase success in Chem 20. Over the past few years, we have seen the majority of our courses get waitlist-full status shortly after registration has opened. To meet this demand, the chemistry department is offering more chemistry courses than we ever have before. We currently have a full-time temporary instructor teaching an overload and would like to shift this to a full-time tenure track position. This would allow us to maintain our course offerings at the Visalia campus, while adding chemistry courses out at the Tulare Center. To meet this increased demand for chemistry classes, we also need more equipment to ensure that all of our laboratory classes can run smoothly. Finally, we have seen excellent results from SI sessions from the limited data that we have but would like to get more data specific to this area. All of these changes take a student-first approach, as the rationale behind each change demonstrates. We have striven to meet the needs of both our students and our community and look forward to continuing to do so.

Action: 2022/2023 - 2021-2022 - (Growth Faculty Position) - Maintain Current Course Offerings in Visalia while Expanding Course Offerings in Tulare

We would like to hire a full time chemistry faculty member in order to maintain our course offerings in Visalia while adding chemistry courses out in Tulare.

Leave Blank:

Implementation Timeline: 2021 - 2022, 2022 - 2023

Leave Blank:

Leave Blank:

Identify related course/program outcomes:

Person(s) Responsible (Name and Position): Julie Rodriguez, Ryan Froese

Rationale (With supporting data): All of our chemistry classes fill! At Census, on the Visalia campus, the chemistry department had 106%, 98% and then 102% of the seats filled in 2018-2019, 2019-2020 and 2020-2021, respectively. We currently have 4 adjunct faculty members covering 6 chemistry classes. We just recently lost one of our adjunct faculty members who was teaching two of those classes. For Spring, we will be down 2 classes because of this resignation. Ryan Froese is also teaching large overloads right now and will not be doing so beyond this semester. We will lose at least another 2 classes when he stops teaching overloads. So, even though this will be a growth position, we need it to maintain our current course offerings. We would also like to move two more of our introductory courses out to the Tulare campus and have this new person teach part of

their load on the Tulare campus. This way we will continue to expand the chemistry program on the Tulare campus. The chemistry fill rates on the Tulare campus have been 116%, 115% and 106% in 2018-2019, 2019-2020 and 2020-2021. **Priority:** High

Safety Issue: No External Mandate: No Safety/Mandate Explanation:

Update on Action

Updates

Update Year: 2022 - 2023

09/09/2022

Status: Continue Action Next Year

We were not given a growth position in the 2021-2022 school year so we will be asking for this position again this year. We currently have a one-year full-time temporary in this position.

At Census, on the Visalia campus, the chemistry department has had an average of 99% of the seats filled during the past four years. Many of the courses that we offer are waitlist-full before normal registration begins. All of our Chem 20 courses are usually full within a couple of weeks and this is causing a bottleneck for our majors program. In addition to full classes and full waitlists, in Chem 20 we observe about 5-7 people per section are trying to "crash" the class on the first day in hopes of enrolling in the course if a registered student drops. For this reason, we have added additional introductory chemistry courses and are now offering a record-breaking 16 Chem 20 courses and 3 Chem 10 courses this fall. We were beginning to see similar trends in our majors courses as well (due to more students taking and passing Chem 20) and have added both a Chem 1 and a Chem 2 this semester to meet student demand. Because enrollment is up in Chem 1 and 2, it is likely that we will need to add additional Chem 12 courses in the future as the program continues to grow. We think it is important to note that unlike other classes, we are unable to add extra students because our laboratory rooms will only hold 24 students. It poses a safety hazard to exceed this number, and we do not have the glassware to do so if we were so inclined. We currently have 5 adjunct faculty members covering 9 chemistry classes. In addition, our temporary full-time faculty member is teaching an overload of 21 units (one Chem 2 course and three Chem 20 courses). If we do not retain this full-time position, we will lose a majors course offering (Chem 2) and significantly decrease the number of Chem 20 courses that we are able to offer. In addition, the added majors course is being offered at night for the first time, which is allowing more non-traditional students to purse a major in the sciences; this aligns with the college's goal of increasing access to our majors courses for all students. So, even though this will be a growth position, we need another full-time faculty member to maintain our current course offerings and allow for equitable access to our majors courses. We would also like to move two more of our introductory courses out to the Tulare campus and have this new faculty member teach part of their load on the Tulare campus. This way we will continue to expand the chemistry program on the Tulare campus.

Impact on District Objectives/Unit Outcomes (Not Required):

Update Year: 2021-2022

10/02/2021

Status: Continue Action Next Year We were not given a growth faculty position last year so we will be asking for this same growth Chemistry position this year. Impact on District Objectives/Unit Outcomes (Not Required):

Resources Description

Personnel - Faculty - We would like to hire another full-time Faculty member in Chemistry to maintain our offerings on both the Visalia and the Tulare Campus. (Active)

Why is this resource required for this action?: We are in need of a full-time faculty member in chemistry to maintain our current course offerings on both the Visalia and Tulare Campuses. We cannot seem to offer enough chemistry classes! At Census, on the Visalia campus, the chemistry department has had an average of 99% of the seats filled during the past four years. Many of the courses that we offer are waitlist-full before normal registration begins. All of our Chem 20 courses are usually full within a couple of weeks and this is causing a bottleneck for our majors program. In addition to full classes and full waitlists, in Chem 20 we observe about 5-7 people per section are trying to "crash" the class on the first day in hopes of enrolling in the course if a registered student drops. For this reason, we have added additional introductory chemistry courses and are now offering a record-breaking 16 Chem 20 courses and 3 Chem 10 courses this fall. We were beginning to

see similar trends in our majors courses as well (due to more students taking and passing Chem 20) and have added both a Chem 1 and a Chem 2 this semester to meet student demand. Because enrollment is up in Chem 1 and 2, it is likely that we will need to add additional Chem 12 courses in the future as the program continues to grow. We think it is important to note that unlike other classes, we are unable to add extra students because our laboratory rooms will only hold 24 students. It poses a safety hazard to exceed this number, and we do not have the glassware to do so if we were so inclined. We currently have 5 adjunct faculty members covering 9 chemistry classes. In addition, our temporary full-time faculty member is teaching an overload of 21 units (one Chem 2 course and three Chem 20 courses). If we do not retain this full-time position, we will lose a majors course offering (Chem 2) and significantly decrease the number of Chem 20 courses that we are able to offer. In addition, the added majors course is being offered at night for the first time, which is allowing more non-traditional students. So, even though this will be a growth position, we need another full-time faculty member to maintain our current course offerings and allow for equitable access to our majors courses. We would also like to move two more of our introductory courses out to the Tulare campus and have this new faculty member teach part of their load on the Tulare campus. This way we will continue to expand the chemistry program on the Tulare campus.

Notes (optional):

Cost of Request (Nothing will be funded over the amount listed.): 125000 Related Documents: CHEM 2021 Program Review Data.pdf Faculty Growth F21 Program Review.pdf CHEM 2022 Program Review Data.pdf

Link Actions to District Objectives

District Objectives: 2018-2021

District Objective 1.1 - The District will increase FTES by 1.75% over the three years

District Objective 2.1 - Increase the percentage of students who earn an associate degree or certificate (CTE and Non-CTE) by 5 percentage points over three years

District Objective 2.2 - Increase the number of students who transfer to a four-year institution by 10 percent over three years

District Objectives: 2021-2025

District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.

District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.

District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.

Action: 2022/2023 - Equipment for Expanded Enrollment

We would like to purchase new equipment to accommodate our expanded enrollment.

Leave Blank: Implementation Timeline: 2022 - 2023 Leave Blank: Leave Blank: Identify related course/program outcomes: Person(s) Responsible (Name and Position): Ryan Froese, Andrea Smith, Chemistry Faculty Rationale (With supporting data): Priority: High Safety Issue: Yes External Mandate: No Safety/Mandate Explanation:

Equipment - Instructional - We would like to purchase: New Heating Mantels, Centigram Balances, Hot Plates with Stirrers and Burets (Active)

Why is this resource required for this action?: We are seeking funds for new equipment for use in our chemistry labs. Due to the increase in the number of courses being offered and in the number of students that are passing through our program, we have more chemistry students than we have ever had in the history of COS. This means that our equipment is being used more frequently and needs to be replaced when it begins to function improperly. We are requesting new heating mantles, centigram balances (including installation and calibration), hot plates with stirrers, and burets to replace broken equipment and to accommodate the additional students that we are serving.

Notes (optional):

Cost of Request (Nothing will be funded over the amount listed.): 28000 Related Documents:

Program Review Quotes 2022-2023.pdf

Link Actions to District Objectives

District Objectives: 2018-2021

District Objective 1.1 - The District will increase FTES by 1.75% over the three years

District Objective 2.2 - Increase the number of students who transfer to a four-year institution by 10 percent over three years

District Objectives: 2021-2025

District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.

District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.

District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.

Action: 2022/2023 - Base Budget Augmentation - Chemistry

We would like to ask for an increase in our base budget in order to support our expanded enrollment.

Leave Blank: Implementation Timeline: 2022 - 2023 Leave Blank: Leave Blank: Identify related course/program outcomes: Person(s) Responsible (Name and Position): Ryan Froese, Francisco Banuelos Rationale (With supporting data): Priority: High Safety Issue: No External Mandate: No Safety/Mandate Explanation:

Resources Description

Adjustment to Base Budget - Chemistry needs a base budget augmentation in order to cover the additional costs of expanding enrollments and the increased cost of supplies. We now have more students taking chemistry and inflation has driven up our cost of purchasing our supplies. We have also had to increase our PPE supplies because more students now are wanting to wear gloves in lab. (Active)

Why is this resource required for this action?: Notes (optional): Our current budget is \$9400 and we would like an increase of \$3500. Cost of Request (Nothing will be funded over the amount listed.): 3500

Link Actions to District Objectives

District Objectives: 2021-2025

District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.

District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.

District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.

Action: 2022/2023 – New Chairs for John Muir Labs

We are requesting funds for new laboratory chairs for use in the science labs of the John Muir building. The current chairs are quite old and many do not roll or function as well as they previously did. We would like to replace our current laboratory chairs with chairs that have roller casters on all feet of the chairs.

Leave Blank:

Implementation Timeline: 2022 - 2023 Leave Blank: Leave Blank: Identify related course/program outcomes: Person(s) Responsible (Name and Position): Science Division Rationale (With supporting data): Priority: Low Safety Issue: No External Mandate: No Safety/Mandate Explanation:

Resources Description

Equipment - Instructional - We are requesting funds for 90 new laboratory chairs for use in the science labs of the John Muir building. (Active)

Why is this resource required for this action?: The current chairs are quite old and many do not roll or function as well as they previously did. We would like to replace our current laboratory chairs with chairs that have roller casters on all feet of the chairs.

Notes (optional):

Cost of Request (Nothing will be funded over the amount listed.): 76500

Link Actions to District Objectives

District Objectives: 2021-2025

District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.

District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.

District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.

Action: 2022/2023 - Expand Tutorial Services in Tulare

We are currently struggling to find tutors in Tulare. So, we would like to either hire MESA tutors to come out to the Tulare Center or do a better job at recruiting Chemistry tutors.

Leave Blank: Implementation Timeline: 2022 - 2023 Leave Blank:

Leave Blank: Identify related course/program outcomes: Person(s) Responsible (Name and Position): Julie Rodriguez Rationale (With supporting data): Priority: High Safety Issue: No External Mandate: No Safety/Mandate Explanation:

Resources Description

Personnel - Classified/Confidential - The Tulare Center needs Chemistry tutors. I currently do not have any tutors for Chemistry at the Tulare Center. My students have to drive to Visalia to receive tutorial services. (Active)

Why is this resource required for this action?: Notes (optional): Cost of Request (Nothing will be funded over the amount listed.):

Link Actions to District Objectives

District Objectives: 2021-2025

District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.

District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.

District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.

Action: 2021/2022 - (Replacement Faculty Position) - Maintain Current Course Offerings

We would like to permanently replace Daudi Bogonko who resigned at the end of the 2020/2021 academic year. We currently have a full-time temporary teaching this load and would like to make this a full-time tenure track position.

Leave Blank: Implementation Timeline: 2021 - 2022 Leave Blank: Leave Blank: Identify related course/program outcomes: Person(c) Becaporcible (Name and Becition)

Person(s) Responsible (Name and Position): Julie Rodriguez, Ryan Froese

Rationale (With supporting data): We would like to hire a full-time tenure track replacement for Daudi Bogonko's position. Daudi resigned from the college at the end of the 2020-2021 school year. We were able to secure a one-year full-time temporary position to get his classes covered. But, we really need to make this a permanent position to maintain our course offerings on the Visalia campus.

Without this full-time position, we would lose 3 chemistry classes. Right now these classes are being taught by a full-time temporary employee. This faculty member teaches one majors level class (either Chem 1 or Chem 2) and also two general chemistry classes (chem20). These three classes are always full and sometimes even waitlist full. At Census, on the Visalia campus, the chemistry department had 106%, 98% and then 102% of the seats filled in 2018-2019, 2019-2020 and 2020-2021 respectively.

Priority: High Safety Issue: No External Mandate: No Safety/Mandate Explanation:

Update on Action

Updates

Update Year: 2022 - 2023 Status: Action Completed Chiara MccPherson was hired to replace Daudi Bogonko. Impact on District Objectives/Unit Outcomes (Not Required):

Resources Description

Personnel - Faculty - We would like to hire a full-time tenure track replacement for Daudi Bogonko's position. Daudi resigned from the college at the end of the 2020-2021 school year. We were able to secure a one-year full-time temporary position to get his classes covered. But, we really need to make this a permanent position to maintain our course offerings on the Visalia campus. (Active)

Why is this resource required for this action?: Without this full-time position, we would lose 3 chemistry classes. Right now these classes are being taught by a full-time temporary employee. This faculty member teaches one majors level class (either Chem 1 or Chem 2) and also two general chemistry classes (chem20). These three classes are always full and sometimes even waitlist full. At Census, on the Visalia campus, the chemistry department had 106%, 98% and then 102% of the seats filled in 2018-2019, 2019-2020 and 2020-2021 respectively.

Notes (optional): Cost of Request (Nothing will be funded over the amount listed.): Related Documents: <u>CHEM 2021 Program Review Data.pdf</u> Faculty Growth F21 Program Review.pdf

Link Actions to District Objectives

District Objectives: 2018-2021

District Objective 1.1 - The District will increase FTES by 1.75% over the three years

District Objective 2.1 - Increase the percentage of students who earn an associate degree or certificate (CTE and Non-CTE) by 5 percentage points over three years

District Objective 2.2 - Increase the number of students who transfer to a four-year institution by 10 percent over three years

District Objectives: 2021-2025

District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.

District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.

District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.

Action: 2021/2022 - (Above Base) - Replace our broken NMR

We would like to purchase an NMR to replace the broken NMR that we use in our Organic Chemistry program.

Leave Blank: Implementation Timeline: 2021 - 2022 Leave Blank: Leave Blank: Identify related course/program outcomes: Experimental Data Students will be able to collect, record, organize, and analyze experimental data and recognize the limitations of measurements. Person(s) Responsible (Name and Position): Ryan Froese

Rationale (With supporting data): About 8 years ago, the chemistry department purchased a benchtop NMR to use with the

09/09/2022

Organic Chemistry program. And, from the time it was installed, it never really worked. It was serviced a number of times but could never be fixed. We have even had to stop trying to use it because it sprays the user in the face when you try to inject samples. Some students have unfortunately been on the receiving end of that occurrence and so have Ryan Froese who teaches organic chemistry.

Our Organic chemistry program is growing. We now have two full Chem 12s per year and 1 full Chem 13 per year. It is an advantage for our students to be able to use an NMR prior to transferring because they will most likely use it in the future if they stay in the field of chemistry.

Priority: High

Safety Issue: Yes

External Mandate: No

Safety/Mandate Explanation: Our current NMR has had to stop being used because it sprays the user in the face with the sample you are trying to inject which is most times, an organic solvent.

Update on Action

Updates

 Update Year: 2022 - 2023
 09/09/2022

 Status: Continue Action Next Year
 We are in the process of purchasing the replacement NMR. We are currently working on the facilities side of things and trying to find the best place for the instrument.

 Immed on District Objectives (Net Derived):

Impact on District Objectives/Unit Outcomes (Not Required):

Resources Description

Equipment - Instructional - We would like to purchase a new NMR to replace our broken one. (Active) Why is this resource required for this action?: Notes (optional): Cost of Request (Nothing will be funded over the amount listed.): 154000 Related Documents: NMR Quote.pdf NMR Site Plan.pdf

Link Actions to District Objectives

District Objectives: 2018-2021

District Objective 2.1 - Increase the percentage of students who earn an associate degree or certificate (CTE and Non-CTE) by 5 percentage points over three years

District Objective 2.2 - Increase the number of students who transfer to a four-year institution by 10 percent over three years

District Objectives: 2021-2025

District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.

District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.

Action: 2021/2022 - (Above Base) - Replace our old Heating Mantels

We have more Organic Chemistry students than we have ever had in the history of COS as more students choose to take advantage of the first two free years of college prior to transfer. This means that our equipment is being used more and is beginning to nor work properly. We need to replace our heating mantels so that we can maintain our lab numbers.

Leave Blank:

Implementation Timeline: 2021 - 2022

Leave Blank:

Leave Blank:

Identify related course/program outcomes: Experimental Data

Students will be able to collect, record, organize, and analyze experimental data and recognize the limitations of measurements. **Person(s) Responsible (Name and Position):** Julie Rodriguez, Ryan Froese

Rationale (With supporting data): Our Organic Chemistry program has expanded. We now offer two Chem 12 classes per year and one Chem 13 class per year while we previously only had one Chem 12 class per year. This means that more students are using the equipment and it is getting old and many of our heating mantels are beginning to not function. We need to maintain a certain number of heating mantels so that we can maintain our current number of students in lab.

Priority: High

Safety Issue: Yes

External Mandate: No

Safety/Mandate Explanation: Old heating mantels that are shorting out and are getting plugged into the electrical outlets are not that safe. We try to side-line those heating mantels that are the worst but sometimes have to use some that are questionable.

Update on Action

Updates

Update Year: 2022 - 2023 Status: Continue Action Next Year We still need heating mantels for students in organic lab. Impact on District Objectives/Unit Outcomes (Not Required):

Resources Description

Equipment - Instructional - Heating mantels are used in most of our organic chemistry labs and the ones we currently have are getting old. Some short out and can not even be used. We would like to replace these old heating mantels. (Active)

Why is this resource required for this action?: Our Organic Chemistry program has expanded. We now offer two Chem 12 classes per year and one Chem 13 class per year while we previously only had one Chem 12 class per year. This means that more students are using the equipment and it is getting old and many of our heating mantels are beginning to not function. We need to maintain a certain number of heating mantels so that we can maintain our current number of students in lab.

Notes (optional): Cost of Request (Nothing will be funded over the amount listed.): 7000 Related Documents: Heating Mantles Wards 1.PDF Heating Mantles Wards 2.PDF

Link Actions to District Objectives

District Objectives: 2018-2021

District Objective 2.1 - Increase the percentage of students who earn an associate degree or certificate (CTE and Non-CTE) by 5 percentage points over three years

District Objective 2.2 - Increase the number of students who transfer to a four-year institution by 10 percent over three years

District Objectives: 2021-2025

District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.

District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.

09/09/2022

Action: 2021/2022 - (Above Base) - We would like to purchase an Automatic Melt-Temp apparatus.

We would like to purchase an auto-melt temp apparatus.

Leave Blank:

Implementation Timeline: 2021 - 2022 Leave Blank:

Leave Blank:

Identify related course/program outcomes: Experimental Data

Students will be able to collect, record, organize, and analyze experimental data and recognize the limitations of measurements. **Person(s) Responsible (Name and Position):** Julie Rodriguez, Ryan Froese

Rationale (With supporting data): Our Organic Chemistry program is growing. We now run three organic chemistry classes per year instead of two and all three classes are full. When students do lab in these classes, they usually make a different solid product with each lab. In order to evaluate the product, we use the melting point of the solid to verify purity and to check to see whether it matches what the melting point of what they were supposed to make. Students submit their melt-temp data and we usually have to trust it because determining a melting point of a solid takes about 30 minutes. If we have 20 students, it would take us 10 hours to find the melting points of all of their products. With this apparatus, it would automatically give the melting point of 5 solids in 10 minutes. and it would take 40 minutes to evaluate one class worth of solids.

Priority: High Safety Issue: No External Mandate: No Safety/Mandate Explanation:

Update on Action

Updates

Update Year: 2022 - 2023 Status: Action Completed 09/09/2022

We purchased this and it is currently in use and working great! Students are receiving better feedback on their melt-temp data. Impact on District Objectives/Unit Outcomes (Not Required):

Resources Description

Equipment - Instructional - An auto-melt temp instrument would significantly reduce the amount of time that it would take for the students and for us to evaluate their products in lab. (Active)

Why is this resource required for this action?: Our Organic Chemistry program is growing. We now run three organic chemistry classes per year instead of two and all three classes are full. When students do lab in these classes, they usually make a different solid product with each lab. In order to evaluate the product, we use the melting point of the solid to verify purity and to check to see whether it matches what the melting point of what they were supposed to make. Students submit their melt-temp data and we usually have to trust it because determining a melting point of a solid takes about 30 minutes. If we have 20 students, it would take us 10 hours to find the melting points of all of their products. With this apparatus, it would automatically give the melting point of 5 solids in 10 minutes. and it would take 40 minutes to evaluate one class worth of solids.

Notes (optional): Cost of Request (Nothing will be funded over the amount listed.): 10000 Related Documents: Auto Melt Temp SRS.pdf Auto Melt Temp Wards.PDF

Link Actions to District Objectives

District Objectives: 2018-2021

District Objective 2.1 - Increase the percentage of students who earn an associate degree or certificate (CTE and Non-CTE) by 5 percentage points over three years

District Objective 2.2 - Increase the number of students who transfer to a four-year institution by 10 percent over three years

District Objectives: 2021-2025

District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.

District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.

Action: 2021/2022 - (Above Base) - Purchase enough Vernier Melt Temps to have a complete class set in Visalia.

We would like to purchase enough melt-temps to have a complete class set.

Leave Blank: Implementation Timeline: 2021 - 2022 Leave Blank:

Leave Blank:

Identify related course/program outcomes: Experimental Data

Students will be able to collect, record, organize, and analyze experimental data and recognize the limitations of measurements. **Person(s) Responsible (Name and Position):** Julie Rodriguez, Ryan Froese

Rationale (With supporting data): Our Vernier hand-held Devices have a melt-temp probe that we use mostly in our Organic Chemistry labs. However, we offer 6 Chem 1 classes per year now and we use them for a lab that we do in Chemistry 1. We do this so that students can get used to using them in their first year of chemistry and we do not have to teach them how to use them when they get into Organic Chemistry. Since we have expanded to using them in our Introductory Chemistry lab, we would like to purchase a class set so that we can get the student into and out of a lab within the 3 hour lab period. It takes about 30 minutes to determine a melting point for a solid so it is tricky to get 24 students to share melt-temp instruments. We currently have 8 instruments. Plus, sometimes more than one lab will need them and we have to reduce the number in each lab by half which further slows things down for the students.

Priority: High Safety Issue: No External Mandate: No Safety/Mandate Explanation:

Update on Action

Updates

Update Year: 2022 - 2023 Status: Action Completed We purchased these and they are in use. Impact on District Objectives/Unit Outcomes (Not Required): 09/09/2022

Resources Description

Equipment - Instructional - We would like to purchase enough melt-temps to have a class set of 24 to use in Chem 12, Chem 13 and Chem 1. These would be used in 9 of our classes throughout the year. (Active)

Why is this resource required for this action?: Our Vernier hand-held Devices have a melt-temp probe that we use mostly in our Organic Chemistry labs. However, we offer 6 Chem 1 classes per year now and we use them for a lab that we do in Chemistry 1. We do this so that students can get used to using them in their first year of chemistry and we do not have to teach them how to use them when they get into Organic Chemistry. Since we have expanded to using them in our Introductory Chemistry lab, we would like to purchase a class set so that we can get the student into and out of a lab within the 3 hour lab period. It takes about 30 minutes to determine a melting point for a solid so it is tricky to get 24

students to share melt-temp instruments. We currently have 8 instruments. Plus, sometimes more than one lab will need them and we have to reduce the number in each lab by half which further slows things down for the students. **Notes (optional):**

Cost of Request (Nothing will be funded over the amount listed.): 9000

Related Documents:

Verniew Melt Temps.pdf

Link Actions to District Objectives

District Objectives: 2018-2021

District Objective 1.1 - The District will increase FTES by 1.75% over the three years

District Objective 2.1 - Increase the percentage of students who earn an associate degree or certificate (CTE and Non-CTE) by 5 percentage points over three years

District Objective 2.2 - Increase the number of students who transfer to a four-year institution by 10 percent over three years

District Objectives: 2021-2025

District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.

District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.

District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.

Action: 2021/2022 - (Above Base) - Purchase an ice machine to supply ice to our Chemistry labs at the Tulare Center.

As we expand our course offerings in Chemistry at the Tulare Center, we are doing higher level chemistry labs and also more chemistry labs. When students have to make an ice bath to cool something, we struggle to have enough ice to supply for an entire lab. An ice machine is a basic necessity to run chemistry labs.

Leave Blank: Implementation Timeline: 2021 - 2022 Leave Blank:

Leave Blank:

Identify related course/program outcomes: Experimental Data

Students will be able to collect, record, organize, and analyze experimental data and recognize the limitations of measurements. **Person(s) Responsible (Name and Position):** Julie Rodriguez, Louann Waldner

Rationale (With supporting data): We have expanded our course offerings in Chemistry at the Tulare Center. Prior to Julie Rodriguez moving out to the Tulare Center, we would offered about 2 introductory chemistry courses. This fall, we are offering 3 introductory chemistry courses (chem 20), 1 basic chemistry course (chem10) and 1 majors level chemistry course (chem 1). We have doubled our offerings and are also offering the higher level chemistry out in Tulare. An ice machine is a basic necessity to run chemistry labs and has not yet been prioritized at the Tulare Center because we have been able to get around it by not offering too much chemistry. The lab tech has gone to the store in the past and purchased ice and has kept it in the freezer. The freezer only has room for about 10 pounds of ice on a good day. This is not enough to supply an entire lab of students making ice baths. And, each of our classes have at least 1 lab where ice is needed. Chem 1 has more than 1 lab that needs ice. We have had facilities out to pick out a good space to put one in and I think we've got it figured out. Now, we just need the funds to purchase the ice machine and we might actually be one step closer to becoming a real chemistry department out at the Tulare Center. Exciting!

Priority: High Safety Issue: No External Mandate: No Safety/Mandate Explanation:

Update on Action

Updates

Update Year: 2022 - 2023 Status: Action Completed We purchased the ice machine and it is currently in use. Impact on District Objectives/Unit Outcomes (Not Required):

Resources Description

Equipment - Instructional - We have expanded our course offerings in Chemistry at the Tulare Center. Prior to Julie Rodriguez moving out to the Tulare Center, we would offered about 2 introductory chemistry courses. This fall, we are offering 3 introductory chemistry courses (chem 20), 1 basic chemistry course (chem10) and 1 majors level chemistry course (chem 1). We have doubled our offerings and are also offering the higher level chemistry out in Tulare. An ice machine is a basic necessity to run chemistry labs and has not yet been prioritized at the Tulare Center because we have been able to get around it by not offering too much chemistry. The lab tech has gone to the store in the past and purchased ice and has kept it in the freezer. The freezer only has room for about 10 pounds of ice on a good day. This is not enough to supply an entire lab of students making ice baths. And, each of our classes have at least 1 lab where ice is needed. Chem 1 has more than 1 lab that needs ice. We have had facilities out to pick out a good space to put one in and I think we've got it figured out. Now, we just need the funds to purchase the ice machine and we might actually be one step closer to becoming a real chemistry department out at the Tulare Center. Exciting! (Active)

Why is this resource required for this action?:

Notes (optional): Installation is approximated at \$350 so the cost of the request exceeds the price of just the ice machine. Cost of Request (Nothing will be funded over the amount listed.): 1200 Related Documents: Ice Machine Quote F21.pdf

Link Actions to District Objectives

District Objectives: 2018-2021

District Objective 1.1 - The District will increase FTES by 1.75% over the three years

District Objective 2.1 - Increase the percentage of students who earn an associate degree or certificate (CTE and Non-CTE) by 5 percentage points over three years

District Objective 2.2 - Increase the number of students who transfer to a four-year institution by 10 percent over three years

District Objectives: 2021-2025

District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.

District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.

District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.

Action: 2021/2022 - (Above Base) - Purchase Vernier Melt Temps for the Tulare Center to keep the student experience at the Tulare Center equivalent to the Visalia Campus.

In an effort to make the student experience at the Tulare Center equivalent to the student experience at the Visalia campus, we would like to purchase Vernier Melt Temps for the Tulare Center.

Leave Blank:

Implementation Timeline: 2021 - 2022 Leave Blank: 09/09/2022

Leave Blank:

Identify related course/program outcomes:

Person(s) Responsible (Name and Position): Julie Rodriguez, Olivia Schmidt

Rationale (With supporting data): The Vernier Melt-Temps are used to measure the melting point of solids. They hook into our already purchased Vernier Handheld devices. The Visalia campus has many Melt-Temp apparatuses and they are used in Chemistry 1 so that students are familiar with them when they take Chemistry 12. Right now, the Visalia campus has melt-temps for student use in Chemistry 1 but the Tulare Campus does not have any yet.

Priority: High Safety Issue: No External Mandate: No Safety/Mandate Explanation:

Update on Action

Updates

Update Year: 2022 - 2023 Status: Action Completed These have been purchased and are in use. Impact on District Objectives/Unit Outcomes (Not Required):

09/09/2022

Resources Description

Equipment - Instructional - The Vernier Melt-Temps are used to measure the melting point of solids. They hook into our already purchased Vernier Handheld devices. The Visalia campus has many Melt-Temp apparatuses and they are used in Chemistry 1 so that students are familiar with them when they take Chemistry 12. Right now, the Visalia campus has melt-temps for student use but we do not have any yet. My Chemistry 1 is taught both semesters now out at the Tulare Center and I think it is important for our students to get the same experience as they do on the Visalia campus. Right now, they do not get introduced to this device like the students on the Visalia campus do. (Active)

Why is this resource required for this action?: Notes (optional): Cost of Request (Nothing will be funded over the amount listed.): 3200 Related Documents: <u>Quote Vernier Melt Temps F21.pdf</u>

Link Actions to District Objectives

District Objectives: 2018-2021

District Objective 1.1 - The District will increase FTES by 1.75% over the three years

District Objective 2.1 - Increase the percentage of students who earn an associate degree or certificate (CTE and Non-CTE) by 5 percentage points over three years

District Objective 2.2 - Increase the number of students who transfer to a four-year institution by 10 percent over three years

District Objectives: 2021-2025

District Objective 1.1 - The District will increase FTES 2% from 2021 to 2025.

District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.

District Objective 2.2 - Increase the number of students who are transfer-ready by 15% and students who transfer to four-year institutions by 10% from 2021-2025.