

ANNUAL
REPORT OF PROGRAM DATA

2022

UNIVERSITY of HAWAII'I
KAUA'I
COMMUNITY COLLEGE



Associate of Science in Natural Science

1. Program or Unit Description

The purpose of the Associate of Science in Natural Science (ASNS) degree is to address the needs of students interested in careers in science, technology, engineering, and mathematics (STEM). There are three ASNS concentrations: Biological Sciences, Physical Sciences, and Engineering. Each provides a clear pathway to properly prepare students for transfer with core introductory courses and labs in biology, chemistry, engineering, math, and physics typically required in the first two years of a broad range of science and engineering baccalaureate degrees at four-year universities. Students can use the AS degree in Natural Science to better market their science background for a science technician position or transfer to a four-year institution and prepare to join a larger and stronger STEM workforce in Hawai‘i.

2. Analysis of the Program/Unit

Residents of Kaua‘i depend on Kaua‘i CC (KauCC) because it is the only institution of higher learning on the island. We continue providing Kaua‘i residents with the quality education needed to pursue important STEM careers to Kaua‘i and Hawai‘i. It is a positive sign that KauCC is able to run the program with enrollment, graduation and transfer numbers that compare favorably to other UHCC’s. The 2021-2022 academic year is the third full year since the ASNS program at KauCC was formally upgraded from “provisional” to “established” by the Board of Regents in spring 2019.

External funding has helped the program along, primarily by supporting a specialist for innovation, identifying issues, assessment, and outreach. External funding also supported student projects and allowed the purchase of a significant number of supplies including the creation of lab kits that could be checked out from the library. The lab kits provided distance education students with efficacious tools to conduct more meaningful hands-on labs at home. Unfortunately, support for the ASNS specialist ended in 2021 with the end of an NSF grant from the division of geosciences. The Louis Stokes Alliances for Minority Participation grant from the NSF ended in spring 2022. The grant supported student projects and peer mentoring. A similar NSF grant for student projects and peer mentoring begins in spring 2023. An additional grant involving natural resources and engineering pathways from high school to universities is expected to start in 2023 as well. Federal funding during COVID supplemented key supplies this year.

Instructional program [ARPD Program Quantitative Indicators](#) includes various data. Key metrics from the ARPD are included in **Tables 1-5**. Only the indicators denoted by two stars (**) are used by the UH system to categorize program health. The metrics provide some indication of the condition of the program, i.e. of course a single number is overly simplistic. Further context may help to understand the numbers or consider trends. Additionally, impacts of COVID-19 complicate interpretation.

Demand Indicators: Enrollment in fall 2021 is down 21%, amid a demographic reduction in high school graduates and a hiring boom as we emerge from the pandemic. There is some context for the trends to consider. Enrollment decreased in fall 2022 across KauCC generally. The KauCC Liberal Arts program, our largest program by far, also experienced a similar (18%) decrease in enrollment. National trends of declining community college enrollment of [15% since 2019](#) have been attributed

to both fewer high school graduates and a reduced share of graduates opting for college or remaining in Hawai‘i. On Kaua‘i, a demographic shift toward fewer young adults makes it more challenging to increase enrollment. Almost all ASNS program students are aged 15-29 years old. The 15-29 year old demographic on Kaua‘i has decreased in population by 2% from 2018 to 2020, according to [2020 census data](#). The program will continue to explore ways to improve enrollment and be accountable, as described further below.

Also noteworthy: There has been a large shift to part-time students (from 41% in 19-20 to 83% in 21-22). The trend is perhaps partially offset by the number of the students who are part-time at KauCC but still full-time students in the UH system.

Table 1: ARPD Key Demand Indicators

Demand Indicators	2019-20	2020-21	2021-22
Number of Majors	43	41	32
Number of Majors Native Hawaiian	8	7	7
Fall Full-Time	59%	49%	17%
Fall Part-Time	41%	51%	83%
Fall Part-Time but Full-Time in System	3%	2%	25%
Spring Full-Time	43%	24%	14%
Spring Part Time	57%	76%	86%
Spring Part Time but Full-Time in System	13%	26%	36%
** Percent Change Majors from Prior Year	2%	-5%	-21%
Total Number of Classes Taught	38	32	24

Table 2: ARPD Key Efficiency Indicators

Efficiency Indicators	2019-20	2020-21	2021-22
Average Class Size	13	15	16
** Fill Rate	55%	63.2%	62.7%
FTE BOR Appointed Faculty	5	5	4
** Majors to FTE BOR Appointed Faculty	8	8	8
Majors to Analytic FTE Faculty	10	13	10
Analytic FTE Faculty	4	3	3
Number of Low-Enrolled (<10) Classes	15	6	4

Efficiency Indicators: Efficiency rating of “Progressing” is based on two metrics: Fill Rate and Majors to FTE BOR Appointed Faculty. The program has improved in both areas. Fill rates have

gradually increased in each of the last three years, from 55% to 62.7%. And the average class size has increased from 13 to 16. Enrollment has been robust in core chemistry and physics courses. Enrollment has been relatively low in MATH 140X (pre-calculus), MATH 242 (Calculus II), and MATH 253 (advanced calculus covering MATH 243 and 244). Enrollment in math is artificially depressed by extensive offerings of MATH 140X as Early College courses, which obviate the need to students to take MATH 140X at KauCC. Nevertheless, the Early College MATH 140X offerings are a net benefit to the ASNS program recruiting and completion (not to mention the students).

The program made a conscious effort to reduce low-enrolled courses, which have been reduced by more than half (from 15 to 4). For example, visionary math faculty members created an accelerated advanced calculus course, MATH 253, which covers the entire second year of calculus (MATH 243 and MATH 244) in one semester. MATH 253 eliminates the need to offer the traditionally low-enrolled MATH 244. Preliminary results suggest the change has also led to a higher success rate of student completers. And the students finish in just one semester instead of two. The college embraces such win-win-win efficiency solutions that still permit students to take all of the courses necessary for degree completion.

Majors to FTE (Full Time Equivalent) BOR Appointed Faculty and FTE BOR Appointed Faculty have remained steady. But all BOR Appointed faculty teaching in the ASNS program also teach a significant number of courses outside the ASNS program. A better metric of efficiency is the Majors to Analytic FTE Faculty, which remains three.

Table 3: ARPD Key Effectiveness Indicators

Effectiveness Indicators	2019-20	2020-21	2021-22
Successful Completion (C or Higher)	89%	82%	78%
Withdrawals (Grade = W)	18	14	19
** Persistence Fall to Spring	79%	68%	63%
Persistence Fall to Fall	44%	41%	45%
Unduplicated Degrees	7	7	7
Associate Degrees Awarded	8	8	7
Transfers to UH 4-yr	10	12	6
Transfers with program degree	6	3	3
Transfers without program degree	4	9	3

Effectiveness Indicators: Effectiveness indicators show mixed signals. The official rating is “Progressing” based on the single metric of fall to spring persistence. Kaua‘i CC continues to have the highest ASNS degree completion ratio (degrees/enrollment) in the UH system. Fall to spring persistence went from 79% (2019-20) to 68% (2020-21) to 63% (2021-2022). Withdrawals increased last year (from 14 to 19) and are surely tied to the increase in online courses. Most of the withdrawals were in distance education courses, e.g. 17 of the 19 withdrawals. Anecdotally, instructors note a higher attrition rate for online courses is typically higher, i.e. students who don’t drop and don’t respond to repeated requests to re-engage with the course. The persistence rate also

tends to be lower for students who take at least some of their load online, i.e. compare fall to spring persistence rates in table 3 vs table 4 (63% vs 56%).

Table 4: ARPD Distance Indicators

Distance Indicators	2019-20	2020-21	2021-22
Number of Distance Education Classes Taught	1	26	18
Enrollments Distance Education Classes	2	443	305
Fill Rate	13%	69%	67%
Successful Completion (C or Higher)	100%	81%	78%
Withdrawals (Grade = W)	0	14	17
Persistence (Fall to Spring Not Limited to Distance Education)	100%	69%	56%

Other important considerations are the number of degrees awarded and transfers to UH 4-year institutions. Degrees awarded remained flat at seven. The number of transfers to UH 4-year programs decreased. Transfers with vs without the degree was relatively low at three each. Essential core courses required for completion for the ASNS in Biological Sciences, BIOL 172 and BIOL 172L, were cancelled due to low enrollment. These courses were scheduled face-to-face without knowing they would start at the height of the Omicron surge. This may have led to low enrollment. This may have resulted in the loss of two or three graduates and/or transfers, which is substantial for this small program. Despite efforts, there are still some structural and logistical barriers to degree completion. The barriers to degree completion and efforts to overcome them are addressed in the action plan.

Finally, at least a couple of degree completers were of Native Hawaiian descent (Table 5), which is 28% of completers and on par with our general student population.

Table 5: ARPD Performance Indicators

Performance Indicators	2019-20	2020-21	2021-22
Number of Degrees	8	8	7
Number of Degrees Native Hawaiian	2	0	2

3. Program Student Learning Outcomes or Unit/Service Outcomes

a) List of the Program Student Learning Outcomes or Unit/Service Outcomes

1. Analyze data effectively using currently available technology.
2. Communicate scientific ideas and principles clearly and effectively.
3. Analyze and apply fundamental mathematical, physical, and chemical concepts and techniques to scientific issues.

4. Apply fundamental concepts and techniques in their chosen natural science field of study, such as biology, chemistry, engineering, physics, etc.

- b) Program or Unit/Service Outcomes that have been assessed in the year of this Annual Review.

Table 6 PSLO Assessment Metrics

PSLO Assessment	Metrics recently used
1. Analyze data effectively using currently available technology.	Assessed in PHYS 170L: Partially subjective evaluation of student analysis, e.g. Model sine/cosine wave using data and computer program; relate result to gravitational acceleration of unknown planet An individual student meets the benchmark by scoring 75% or greater on the relevant questions
2. Communicate scientific ideas and principles clearly and effectively.	Assessed in PHYS 272L: Subjective analysis of scientific writing, e.g. Rubric on detailed laboratory write up An individual student meets the benchmark by scoring 75% or greater on the relevant questions
3. Analyze and apply fundamental mathematical, physical, and chemical concepts and techniques to scientific issues.	Assessed in PHYS 170L/272L: Longitudinal objective assessment, e.g. assessment of improvement in student learning for 2-D vector addition problem presented in PHYS 170L compared with results in PHYS 272L
4. Apply fundamental concepts and techniques in their chosen natural science field of study, such as biology, chemistry, engineering, physics, etc	Not Assessed

- c) Assessment Results.

Table 7 PSLO Assessment Results

PSLO Assessment	% Met Benchmark 2021 (2020 result)	Comments
1. Analyze data effectively using currently available technology.	N/A (87% in 2021)	3 rd implementation of this assessment. The assessment was adapted for online format as recommended last year. Issues with data in Lulima a result of systemic errors (registration or data saving on Lulima) Recommendation: Keep assessment and compare to 2022-23 data; better adapt to online format

2. Communicate scientific ideas and principles clearly and effectively.	71% (79% in 2021)	As in 2021, all students taking the assessment met the benchmark. The assessment was adapted slightly as recommended last year. But a larger share of students did not attempt this assessment in 2022. Results between both years appear acceptable. However, it appears there is a trend towards lower student aptitude in 2022. Recommendation: Develop strategies to get better participation.
3. Analyze and apply fundamental mathematical, physical, and chemical concepts and techniques to scientific issues.	87%/47% (100%/85% in 2021)	Longitudinal study: The assessment is in two parts including vector addition and angle calculation. A similar number of students fell for a distractor addressing a misconception. The assessment and its implementation were altered slightly based on last years' recommendation. It also included a new distractor. The new distractor ended up capturing the majority of those who did not correctly complete the second part of the assessment. Recommendation: The misconception identified by the new distractor is noted and strategies should be developed to address it.

d) Changes that have been made as a result of the assessment results.

The value of program assessment comes from the process of carefully considering what students should learn and how to assess student learning. Assessments are still being adapted. Changes in response to program assessment are noted in the comments in Table 7 above. The most notable change is for the assessment of PSLO #3, which helped identify a student misconception regarding a key concept. Assessment plans have been continually adapted and improved as noted. PHYS 272L was identified as an ideal course to run summative program assessments since students in all ASNS concentrations must take this course and it is generally taken in their last semester at KauCC.

The Action Plan details issues of concern and strategies to address them. But these are not as a result of assessment of student learning. The total number of students in the program taking summative assessment and year-to-year changes in percent of students meeting benchmarks are too small to draw meaningful conclusions. The total number of students completing the summative assessment in PHYS 272L is reasonable; it is similar to the number of transfers to 4-yr UH institutions. Some KauCC are not assessed because not all ASNS students take PHYS 272L at KauCC before transferring within Hawai'i or out of state. Further, some students from other UH campuses are taking only their physics courses at KauCC, which limits utility in assessing KauCC's ASNS program.

4. Action Plan

Enrollment and degree completion remain the largest potential areas for growth and improvement in service of students of Kaua‘i. Completion rates are relatively high, as mentioned, but could be higher. Logistical and informational barriers remain. Below is an update on the previous action plan and continued plans of actions to promote program health.

a) Early College ASNS courses

KauCC continues to offer several Early College ASNS courses, e.g four math courses in spring 2022. The benefits were discussed in last year’s report, i.e. students benefit from instruction and course design by a disciplinary expert, students get college credit, and make progress toward an ASNS degree. In the process, students also become more familiar with college in general, and KauCC and KauCC faculty in particular. Students learn about courses and academic pathways available. Indeed, they begin to make progress specifically toward their ASNS degree.

Early College (and accelerated) math offerings should continue as they have been beneficial to students’ ability to complete an ASNS degree and transfer to 4-year universities. There is little doubt the availability of Early College and accelerated math offerings has benefitted students and all metrics of ASNS program health. Several math courses have already been offered via Early College for a few years and proved instrumental in boosting awareness, college readiness, enrollment, and success in the KauCC ASNS program. MATH 103: College Algebra and MATH 140X: Precalculus prepare students along the STEM track and provide the basic fundamentals students need for STEM careers. MATH 103 and 140X are also offered as an Early College option at all three public high schools on Kaua‘i. They are the prerequisite courses students need to succeed in a required ASNS course -- MATH 241: Calculus.

In the spring 2022 semester, KauCC was scheduled to offer Early College ASNS science courses, PHYS 151/151L at Kapaa High School and SCI 170 at Waimea High School. Unfortunately, neither course attracted enough students to run.

The ASNS is still relatively new. As awareness grows, the program is expected to attract a larger share of promising students who might otherwise have pursued degrees out of state or entirely different careers.

b) SCI 170: STEMinar

Students continue to struggle to schedule prudently. Many are first-generation college students and rely mostly on STAR GPS to determine their schedules. STAR GPS is improving but sciences pose unique challenges to the adequacy of STAR GPS due to the large number of scenarios, prerequisites, course sequencing, and other considerations. The SCI 170 course was specifically designed and adapted to address effectiveness issues. It became a required part of the ASNS curriculum in fall 2020. SCI 170 is a one-credit seminar that introduces students to academic pathways and career possibilities in STEM, along with STEM concepts to help with career readiness. All students map out their 4-year course plan for their prospective BS degree. SCI 170 has helped ensure students’ near and long-term course plan matches their ambitions, especially

considering our limited offerings. The course helps identify potential issues for students in their first semester. They benefit from the opportunity to discuss their options going forward with a STEM faculty member. There are several key considerations students generally don't know. For example, students gain awareness of the availability/lack of availability of key courses such as EE 160, overcoming glitches still being worked out with STAR GPS, etc. The majority of students in SCI 170 in both fall 2022 (as with fall 2020 and fall 2021) changed their current or near-future academic plans based on activities and feedback as part of the course. In many cases, students avoided a superfluous course or saved a semester or more by enrolling more strategically in courses that are prerequisites or part of a sequence.

Students who avoid taking SCI 170 because it is not required for bachelor degree programs are likely suffering setbacks to timely completion and possibly dropping out due to frustration as they realize their course sequencing is sub-optimal and will require additional courses and/or semesters to reach their goals. And, of course, students who fail to take SCI 170 won't earn the ASNS degree from KauCC that they might otherwise deserve. The program coordinator has worked with the counselor designated for the ASNS program, Wade Tanaka. Wade is retiring and a newly designated counselor for the ASNS has not been communicated as of this writing. The program coordinator will reach out to establish a close relationship with the counselor once they are designated.

c) Collaboration with UHCC on key engineering courses

The KauCC ASNS coordinator collaborated in summer 2021 as part of a UHCC ASNS working group to coordinate online offerings of key lower-division courses required by many engineering degrees that are difficult to offer at all UHCCs. We now have a chance to see how that is playing out.

KauCC students are taking computer science courses like EE 160 and ICS 111 online via other campuses. EE 160: Programming for Engineers fulfills a specific requirement for seven all engineering majors at UH Manoa. EE 160 is also a prerequisite for other lower-division and many "third-year" engineering courses. KauCC had not been able to regularly offer these courses due to staffing and enrollment issues. This has been a win-win since our students can now regularly take either course. These computer science courses are especially amenable to online instruction without compromising quality.

But lack of available faculty or lack of sufficient students (or both) prevent most UHCC's from offering EE 160 and other, similarly important courses. The impact on students can be profound; transfer students may be delayed in their pursuit of a 4-yr degree by a semester or more. EE 160 is a required part of KauCC's ASNS engineering concentration curriculum. Yet have seldom offered the course at all, which is one key reason KauCC students transfer without receiving their ASNS degree.

Additionally, KauCC engineering students have learned through SCI 170 that they will have access to other key courses that have never been offered at KauCC, e.g. civil engineering courses like CE 270. There is a plan for additional engineering courses that maintains or enhances course experience and instruction quality through collaboration to allow hands-on access to KauCC lab facilities for

EE 211 taken online through UHMC. KauCC electronics instructor, Geogeanne Purvinis, worked out the collaboration with UHMC and graciously offered her time and expertise to prospective students. Unfortunately, Dr. Purvinis' retirement in spring 2022 puts this deal in jeopardy.

Conversely, KauCC is now the host campus for other UH system CC students to take physics courses. Hawai‘i CC faculty refer their ASNS students to our online year-long sequence of physics and labs for scientists and engineers (PHYS 170/170L and PHYS 272/272L). The courses are offered asynchronously online with physical lab kits for at-home hands-on activities students can do at home. Just over half the students enrolled in our PHYS 170/272 courses are from Hawai‘i CC or from other campuses in the UH system. This is a minor benefit to our SSH and efficiency metrics while also allowing Hawai‘i CC students a viable path to their ASNS degree.

Our former ASNS specialist, Brad Dempsie, (now physics lecturer due to the end of an NSF grant) had the brilliant idea of offering the year-long sequence of physics courses for life science majors which also fulfills the physics requirement for the ASNS concentration in biological sciences (PHYS 151/151L and PHYS 152/152L). His choice was wise as PHYS 151/151L completely filled at the start of fall 2022 and PHYS 152/152L filled for spring 2023. This has presented new challenges as we seek to overcome logistical barriers that will allow us to ensure priority for Kaua‘i CC students and Hawai‘i CC students over those at other UH system campuses that have additional options at their home campus. Again, Mr. Dempsie's idea has helped our students by providing a more reasonable path to their degree (PHYS 151/152 is sufficient preparation for their biological sciences degree but not quite as demanding as PHYS 170/272). The additional students in these courses have also helped with our SSH and program efficiency. Unfortunately, we can't rely on Mr. Dempsie's continued innovations since the grant supporting his efforts ended in fall 2021.

The addition of the PHYS 151/152 and labs sequence is emblematic of the complexity of course offerings and modality. The additional students from other campuses allows us to run the courses for our students with high efficiency. Yet, a recent survey of student preferences indicates they prefer face-to-face courses. We can agree that online teaching may not be quite as effective. As mentioned, the attrition rate seems to be higher. The students' preference is also puzzling since enrollment in our face-to-face ASNS courses (and other science courses) has lagged that of online course offerings. It may be that students ideally want face-to-face instruction but favor the flexibility of online instruction for their schedules. It's something to continue to monitor and consider.

d) Continue Pursuing Federal Grants and UH Foundation Funds

External grants and funds have helped prepare our students for STEM careers, extend or maintain STEM course offerings, equip our labs with high-quality supplies, offer meaningful hands-on labs despite remote learning conditions during the pandemic, and encouraged and supported Native Hawaiian and other students in pursuit of undergraduate research experiences.

We lost some grants and gained some new ones. We have continued to try for more. Grants were discussed in item 2 on page 3. ASNS students have benefitted from a dedicated UH Foundation fund annual donation, NSF Partnerships in Geoscience Education (PAGE) award, and NSF Louis Stokes Alliances for Minority Participation (LSAMP) award. But all three sources of funding were

for fixed terms that have ended, with no new funds delivered after spring 2022. We lost a specialist hired through the PAGE award, as mentioned. And, Kaua'i CC lost its on-island UH Foundation representative in summer 2020, which led to a reduction in UH Foundation funding. That campus-based position has just been replaced in late fall 2022.

e) Continue Identifying Logistical Barriers to Completion

Effort will be needed to identify and overcome logistical barriers to completion. SCI 170 and an active, engaged ASNS academic counselor will ensure students are on the right pathway. But there remain logistical barriers across the campus and UH system, which have continually proven to be difficult to anticipate, expose, and/or fix. APRU's from previous years include numerous examples.

For example, first year students, in particular, are still struggling to prudently plan their first semester of courses as well as for their two-year schedule. This was discussed in part b) on SCI 170 above. But the advice students get in SCI 170 comes too late to address the problems with their first semester courses in which they are already enrolled (and courses they should have been enrolled in).

Last year, the division canceled key required courses for ASNS biological sciences majors, BIOL 172/172L, were cancelled in Spring 2022 due to low enrollment based on a confluence of factors. The UH system had issued a Covid-19 vaccination mandate starting Jan 2022 which has since been rescinded. In fall 2021, students could still do weekly testing and not be vaccinated to attend in person courses. Many of the students enrolled in BIOL 171/171L opted for testing at the end of the Fall semester 2021. Many of the students who might have continued on to take 172/172L in person the following Spring 2022 chose to remain unvaccinated. BIOL 172/172L, a second-semester sequence of courses, averaged 12 students in the two springs before the pandemic. The course was thus susceptible to low enrollment when squeezed by both students uncomfortable with a face-to-face course during the pandemic and also those who refused to be vaccinated. Additionally, the division cancelled the only section of MATH 140X offered at KauCC, which is a key prerequisite for the required calculus course (MATH 241). The success of MATH 140X as an Early College course has made it harder to fill the section of MATH 140X at KauCC.

This year, the program learned about the difficulty in reserving space in PHYS 152/152L for KauCC students, Hawai'i CC students, and students who completed PHYS 151/151L at KauCC regardless of campus. The reservations are sought so the course does not fill with students from UH Manoa. The program wants to ensure there is space in physics courses offered at KauCC for KauCC students and the HawCC students who are directed by their campus to take physics at KauCC. It is not easy to fix. Also, students could take PHYS 151 or 152 at their home campus and take PHYS 151L at the KauCC campus. The mixed enrollment is less than ideal for a number of reasons, e.g. KauCC students could be shut out of the lecture or the lab, the KauCC instructor synchronized specific lecture and lab material to be mutually beneficial and hosts both content on one Laulima site, etc.

f) New Curriculum and outreach

The program seeks to tap into unrealized enrollment potential to address student interests and community needs with a sensible new pathway for science students interested in transfer to four-year university programs in environmental sciences and natural resources management.

A new PAR was resubmitted in fall 2022 (for fall 2023 implementation) to establish:

- A new ASNS concentration in Environmental Science (ES) to capture students, particularly Native Hawaiian students, who otherwise might not pursue a degree in STEM.
- It is hoped the ES concentration can attract students who might not otherwise pursue a STEM career, help meet student and community needs, and build a more robust ASNS program.
- Adding an ES concentration offers a guiding degree pathway for CC students that better aligns for transfer to 4-yr programs in Environ. Science and Natural Resources.
- Outreach to other ASNS programs and key faculty in target bachelor degree programs will help us obtain UH system approval to formally add the new concentration. The ASNS coordinator has met multiple times to coordinate with other UHCC ASNS faculty and professors in Natural Resources and Global Environmental Science at UH Manoa.
- The curriculum was first introduced in fall 2020 but put on hold by UH system leadership until this year. It is still not certain the new concentration will ultimately be approved.

The ASNS coordinator has also been involved in numerous outreach efforts that will hopefully boost awareness and enrollment in our ASNS program at Kau CC such as visiting high school classes (e.g. MATH 140X Early College courses), attending college career events, engaging with students at on-campus onboarding events, etc.

5. Resource Implications

One (1) FTE Physics instructional position. This position was on track to be institutionalized from an expiring grant-funded position, but the COVID-19 hiring freeze meant that this plan was not implemented. The need for a second physical science instructor remains the same if not greater. With the migration of our physics curriculum to online, we have begun mailing students kits that allow them to engage in labs at home (at no cost to the student!). Creating and assembling and mailing these lab kits requires extensive time. Should we lose our current physics lecturer who goes above and beyond the call of duty, it is likely we would stop utilizing these lab kits or need to switch to commercial kits that the students would then pay for. (This position is also being requested by the ASNS program and is included here to support that request.) **COST: salary and fringe benefits for one instructor. DATE NEEDED: Fall 2023.**

Replace cabinets and shelving in NSCI 107 and 101: Health and Safety concern. The fixtures in these two rooms have reached their end of life and will need to be replaced soon. Several of the cabinets are falling apart and some of the counterspace has holes in it. Recently installed electrical outlets are no longer firmly attached to the lab stations because the integrity of the material has been compromised. This minor renovation will alleviate the safety issues posed by the existing cabinets.

(This is also being requested by the ASNS program.) **COST: \$8000-\$12,000, per room per estimate by Pat Watase for similar work performed last year in another classroom.**

Further Resources are Requested to Renovate the NSCI 107 Classroom: Health and Safety concern. Legacy gas lines used to feed Bunsen burners are obsolete and a potential hazard. Central consoles for gas burners and sinks along each row restrict instructional flexibility and are superfluous. These can be removed along with the gas lines and the classroom refurbished. An updated estimate may be needed. Estimates of sink and gas line removal and renovation will depend greatly on details, e.g., which current building codes are relevant, whether engineering drawing or emergency shut-off valves are needed, etc. **COST: \$50,000-\$100,000.**

Academic Support for Natural and Marine Sciences: Request to add a position to hire one part-time academic support person for lectures and laboratory courses for biology and marine science courses. This individual would be involved in instructional support for both the students and for the instructor. This involves tutoring and helping students with content comprehension and assignments. They would also be present during lab course hours for instructional support for enhanced student success. They would work with the instructor to assist with lab preparations including setup/ breakdown, as well as aid in ordering of materials. They would be involved in field excursions, logistics, and methods.

One (1) Biology Specialist (Academic Support Specialist). Rather than continuing to hire professional biology tutors, a longer-term biology specialist would be able to collaborate with faculty to provide academic assistance to students in biology. **COST: Fringe and benefits for APT Band A.**

Lab Kit Supplies. A few additional supplies are needed. lab kits allow students in online lab course to learn physical science, performing hands-on experiments and taking physical measurements with actual equipment is a mandatory part of preparing students for a career in STEM or simply getting a solid background in experimental science. Kits are mostly complete but a few additional lab supplies are needed. Most notably, custom two-piece retort stands will be ordered. The new stands will allow for packing kits into smaller boxes, which will ultimately save money with recurring shipping costs. **COST: \$5,000.**

Science Building for the 21st Century: The biology, chemistry, and physics classrooms (Natural Science Building) are in an embarrassing, decrepit state that reflects poorly on the college and our science program. What we really want is capital improvement funds and/or UH Foundations funding for a new, modern science building that is efficient and constructed with sustainability in mind. **COST: \$15,000,000 based on UHMC’s Science Building completed and LEED certified in 2013 for \$40,000,000. The building at UHMC is substantially larger than needed at Kaua‘i CC.**

6. Optional: Edits to Occupation List for Instructional Programs

Review the Standard Occupational Classification (SOC) codes listed for your Instructional Program and verify that the occupations listed align with the program learning outcomes. Program graduates should be prepared to enter the occupations listed upon program completion. Indicate in this section if the program is requesting removal or additions to the occupation list.

I am requesting changes to the SOC codes/occupations listed for my program/unit.