Program: Drone Technology (NAVI - Non-Credit Aviation)

Division: PATH

Date: November 1, 2023

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With the approval of the Academic Senate and the Institutional Planning and Effectiveness Committee, we are moving to a bi-annual cycle of program review updates and full program reviews. Fall 2023 is a Program Update cycle.

Please note: Program Update is NOT in itself a vehicle for making requests. All requests should be made through appropriate processes (e.g., Instructional Equipment Requests) or directed to your dean or supervisor.

Time Frame: This Program Update *should reflect* on program status during the 2022-23 academic year. It should *describe plans* starting now and continuing through 2023-24.

Key Terms: The Program Review Glossary defines key terms that you can review before writing: https://bit.ly/2LqPxOW

HELPFUL LINKS:

1) [Program Review Committee Page for Writers](#)
2) [Fall 2022 Program Reviews](#)
3) [Frequently Asked Questions](#)

For Help: Contact Nadiyah Taylor: ntaylor@laspositascollege.edu.

INSTRUCTIONS:

1) Please respond to each question with enough detail to present your information, but it doesn't have to be very long.

2) If the requested information does not apply to your program, write "Not Applicable."

3) Suggested: Communicate with your dean while completing this document.

4) Send an electronic copy of this form to Nadiyah Taylor and your dean **by November 1, 2023**

Some sections have been removed for ease of completion. However, these important tasks will need to be reviewed by programs:

- ✓ **Check for Title V updates required for any of your courses or Programs:**

    1. To check on the status of courses and programs to see if any updates are required

        a. Log in to CurricUNET

        b. Select "Course Outline Report" under "Reports/Interfaces"

        c. Select the report as an Excel file or as HTML)

    2. If updates are needed, submit these updates to the Curriculum Committee

    3. Then, compare each Program Map to your current course offerings and course sequencing. Pay close attention to prerequisite information and to classes that may only be offered during certain semesters.

        a. If your map requires a non-Curricular change (i.e., course sequencing) consult your [Pathway counseling faculty liaison](#) to initiate any changes.

        b. If your map requires a Curricular Change (Program modifications) - these are initiated through the Curriculum Committee.

- ✓ **Review your programs to see if there are any modifications needed**

- ✓ **Review your programs and courses to see if any will be sunset or deactivate**

HAS YOUR PROGRAM HAD ANY SIGNIFICANT UPDATES SINCE THE LAST PROGRAM REVIEW?

- ☐ **No, I'd like to skip the update this year, and I understand that I can only do this twice in three years.**

THERE ARE TWO SECTIONS:

1. Updates - *All programs* (page 3)

2. CTE Review – *CTE programs only* (pages 4-7)

ALL PROGRAMS: SECTION ONE

1. Please describe the most important updates, achievements, challenges, or barriers to your program in academic year 22-23.

As a new program, we are excited to have data from our first full academic year. We ran all three courses each semester and an additional introductory course in Spring 2023 resulting in 54 student headcounts and 102 total course enrollments. We have been successful in reaching capacity and often over filling our weekend courses.

Our main challenge is the highly variable skill level among students. Many have very limited experience with this type of technology, in contrast to others who have well developed hand coordination stemming from video games or using other devices. We have mitigated these differences by selectively pairing students together of differing skill levels and/or matching student levels. We are also developing progressively challenging tiered exercises where students can change the difficulty at their own pace.

Other challenges are related to attracting a younger age group. Our courses have primarily been scheduled on Saturdays, which is attractive to an older demographic. Lastly, our students tend to separate into two distinct groups, those interested in photography versus survey and mapping. These two opposing themes can distract students away from their intended goals. It has also placed pressure upon equipment available, currently we have two aircraft dedicated to mapping, yet these are not ideal for photography. It may be necessary to invest in additional aircraft to strengthen photography.

Our program received Perkins Grant funding for student interns. Each month they conducted flights over the LPC vineyard using a multispectral camera, post-processed the data, and updated our website. Our three interns each transferred to UC Berkely, UC Davis, and Stanford University. The intern program is a unique opportunity for students to collaborate on active research while developing best practices for the program.

We are also proud of our [web presence](#) and social media efforts. The program webpage has additional informational pages that highlight exciting and informative aspects of our program. There is a dedicated section describing our remote sensing work, formal reports, and links to monthly data sets. To help people interact this data we have created video tutorials on how a user can download, view, and interpret our data. Additional web pages showcase our internship program.

LPC Equity Definition: Equity is parity in student educational outcomes. It places student success and belonging for students of color and disproportionately impacted students at the center of focus.

2. What are the most important things your program observed with respect to student learning, equity, and success in 22-23? This could be related to your SLOs or from other sources.

Our success rate for all students was 79% in Fall 2022 and 85% in Spring 2023. When the success rate was separated by modality, these above average numbers were deceiving. For the face-to-face courses, it was clear that those individuals who consistently attended the 4-week course passed the course at high rates, 88% and 85% (Fall/Spring). This pattern contrasts to a 57% completion rate for the online distant education course. It is recognized that this course is intensive and concentrates on a significant amount of material in a short period. This material can be very specialized and may provoke students to reconsider their objective in enrolling in the course. Given the short amount of time which students must decide to withdraw and/or drop, students may simply decide to not continue. These are non-credit courses, which have a low financial burden. To address this low pass rate, the online course is being converted to a Hi-flex modality in the Spring 2024 semester. A hi-flex format may offer more potential to connect with students.

Our demographics are sharply biased toward males. Fewer females enrolled at a near 1 to 2 ratio with men, however women were much more likely to succeed at 93% in contrast to males at a 78%. As a group 60% of the students are over 25 years of age. Given the older student population, the majority are enrolled as continuing students (60%), are taking non-credit only (60%), and already have achieved a BA/BS degree or higher (40%).

In contrast to our general college population, 50% of our students identify as white as compared with 30%, and we are less represented by students who identify as Asian, 10% versus 20% college wide. We have been successful in recruiting African American students represented as 7% versus 4% as a college. In terms of success rate, white students have an 87% pass rate compared with 82% Asian, and when whites are compared to all other groups combined, the success rates drop to 77%.

3. Got anything new planned for 23-24?

Our plan for the 23-24 academic mainly focuses on curriculum changes. We are splitting our second course, NAVI 202, into two separate classes, one will focus on photo/videography (NAVI 202A) and another will focus on mapping/survey (NAVI 202B). As part of this process, we are altering the certificate of completion to reflect this change.

We secured a Strong Work Force grant to research the efficacy of program expansion. Consistent positive enrollment numbers and steady student interest have indicated that this program has potential for expansion. This plan will fund program development with a proposal to transform it from non-credit to credit courses. If approved through administrative processes, it will propose curriculum to support an associate degree, certificates, and a high school summer camp program. These courses will be modeled after successful programs at Palomar College and West Valley College. The grant supports two regional employer symposiums that will enhance internship and career pathways.

An exciting aspect of this grant is the Summer Drone Camp for high school students. This will be a one-week session for 25 concurrent enrollment students. It is titled, "Summer Drone Coding and Flight Camp," and will focus on developing computer programming, drone piloting skills, and career awareness. This course stemmed from a request by Bay Area LEEDS (Linking Education and Economic Development Strategies) organization to adapt their already successful and existing summer drone camp series into the Las Positas College system. These annual drone camps will start in the summer of 2024 and be run through the Computer Science program. The curriculum is designed to be a 1-unit course that is mirrored as a non-credit version to add flexibility on how it is offered.

Early in the semester, we visited the Drone Program at the Laurence Livermore National Laboratory (LLNL) with multiple disciplines represented from LPC (Computer Science, Engineering, Photography, Geography, and Anthropology). This visit included a tour of their machine shop, fabrication area, and a demonstration of over 20 drones flying in a coordinated swarm like pattern within an open-air cage like netted structure. Many collaborative projects were discussed, most promising was the potential for a drone internship program that would be based at LPC, yet with a video conference link to LLNL. Unfortunately, due to the high security clearances needed within this department, in-house interns was not a suitable option.

Lastly, as mentioned in the previous section, we are currently running an internship program that will continue over the academic year. One of our goals is to identify a local vineyard that is willing to develop a collaborative relationship with our intern program and apply the lessons learned in working with our own Viticulture and Winery Technology program to their own crops.

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LABOR MARKET CONDITIONS: EXAMINE YOUR MOST RECENT LABOR MARKET DATA (WITHIN THE LAST 2 YEARS).

1. Demonstrate labor market need (demand – completers = need); projected growth for the next five years.

The most recent Labor Market Information characterizes a trend that there appears to be an "undersupply" of Drone Photography workers. With this said, the two primary occupations that where identified as Photography and Avionics Technicians. When projecting out a 5 year trend, aviation showed a slightly positive trend, while photography was slightly negative. Given the many industries which use drones, these two categories may not capture the full scope of employment possibilities, and it may be helpful to request a newly craft LMI with a broader range of job descriptions.

2. What is the median income for occupations within your program?

The two occupations identify a median hourly wage varying from $23.65 in photography and $43.71 for aviation. Both of these reflect the East Bay Sub-region and are higher in comparison to the wider Bay Area.

ADVISORY BOARDS:

1. Has your program complied with advisory board recommendations?
   i. ____X___YES _____No

2. If not, please explain.

STRONG WORKFORCE PROGRAM METRICS: UTILIZING LAUNCHBOARD, REVIEW THE STRONG WORKFORCE PROGRAM METRICS. REVIEW THE DATA AND THEN REPORT ON YOUR SPECIFIC PROGRAM.

Data Reporting Notes:
Data are suppressed according to FERPA to protect students' personally identifiable

information. Suppression takes place when too few students are included in the metric. Meaning, if there is not data, your program did not have a minimum of ten (10) students for this metric.

LaunchBoard data metrics lag in terms of academic year reporting. For your program review SWP metrics, report on the latest year available with a notation of the year. Meaning, if there is not data, your program did not have a minimum of ten (10) students for this metric.

CI. STRONG WORKFORCE PROGRAM STUDENTS

Report on students in your program who took at least 0.5 units in any single credit course or who had at least 12 positive attendance hours in any noncredit course(s) in the selected year or who enrolled in noncredit course(s) in Spring 2020 or any term in academic year 2021 and who enrolled on a TOP code that is assigned to a vocational industry sector in the selected year.

How may these metrics improve?

Our current metrics show an 89% success rate for students who represent took at least 0.5 units in any single credit course or who had at least 12 positive attendance hours in any noncredit course(s)

C2. SWP STUDENTS WHO EARNED 9 OR MORE CAREER EDUCATION UNITS IN THE DISTRICT IN A SINGLE YEAR

Report on students in your program, the proportion who successfully completed nine or more career education semester units in the selected year within a single district

How may these metrics improve?

Our program is currently strictly non-credit.

C3. SWP STUDENTS WHO COMPLETED A NONCREDIT CTE OR WORKFORCE PREPARATION COURSE

Report on students in your program with a noncredit enrollment on a CTE TOP code or a noncredit enrollment in a workforce preparation course, the proportion who completed a noncredit CTE or workforce preparation course or had 48 or more contact hours in a noncredit CTE or workforce preparation course(s) in the selected year

How may these metrics improve?

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C4. SWP STUDENTS WHO EARNED A DEGREE OR CERTIFICATE OR ATTAINED APPRENTICESHIP JOURNEY STATUS

Report on students in your program the number of unduplicated SWP students in your program who earned a noncredit certificate, Chancellor's Office approved certificate, associate degree, and/or CCC baccalaureate degree on a TOP code assigned to a vocational sector and who were enrolled in the district on any TOP code in the selected year or who attained apprenticeship journey status on a vocationally flagged TOP code in the selected year and who were enrolled at any community college at the start of the apprenticeship program on a vocationally flagged TOP code

How may these metrics improve?

We had one student secure a certificate and unfortunately do not have additional information to report. From the perspective of a new program, it will be necessary to learn from other programs about how to best encourage students to pursue a certificate and how to maintain contact with those students.

C5. SWP STUDENTS WHO TRANSFERRED TO A FOUR-YEAR POSTSECONDARY INSTITUTION

Report on students in your program who earned 12 or more units at any time and at any college at any time up to and including the selected year and who exited the community college system, the number of students who enrolled in any four-year postsecondary institution in the subsequent year

How may these metrics improve?

As a new program, survey instruments will need to be integrated into subsequent courses.

C6. SWP STUDENTS WITH A JOB CLOSELY RELATED TO THEIR FIELD OF STUDY

Report on students in your program who responded to the CTE Outcomes Survey and did not transfer to any postsecondary institution, the proportion who reported that they are working in a job very closely or closely related to their field of study.

How may these metrics improve?

No survey responses.

C7. MEDIAN ANNUAL EARNINGS FOR SWP EXITING STUDENTS

Report on students in your program who exited the community college system and who did not transfer to any postsecondary institution, median earnings following the academic year of exit

How may these metrics improve?

As a new program, survey instruments will need to be integrated into subsequent courses.

C8. MEDIAN CHANGE IN EARNINGS FOR SWP EXITING STUDENTS

Report on students in your program students who exited and who did not transfer to any postsecondary institution, median change in earnings between the second quarter prior to the beginning of the academic year of entry (for the first time ever as a non-Special Admit or return to any community college after an absence of one or more academic years) and the second quarter after the end of the academic year of exit from the last college attended.

How may these metrics improve?

As a new program, survey instruments will need to be integrated into subsequent courses.

C9. SWP EXITING STUDENTS WHO ATTAINED THE LIVING WAGE

Report on students in your program who exited college and did not transfer to any postsecondary institution, the proportion who attained the district county living wage for a single adult measured immediately following academic year of exit.

How may these metrics improve?

As a new program, survey instruments will need to be integrated into subsequent courses.

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