

2022-2024  
Fire Technology Program,  
Forestry Management  
& Aeronautics/Aviation  
Instructional Program Review

**LASSEN COMMUNITY COLLEGE**

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# **INTRODUCTION:**

This Institutional Program Review (IPR) is organized into three distinct sections. The first section focuses on the Fire Technology Program, the second section addresses Forestry Management, and the final section contains data from the standalone Aeronautics/Aviation class.

It is important to note that the data pertaining to the Aeronautics/Aviation program—including metrics such as success rates, enrollment figures, and retention statistics—was not provided separately from the Fire Technology data. This Data was separated manually and is presented as data attributed directly to the Aviation program.

To enhance efficiency in future reviews, it would be beneficial to receive Aeronautics/Aviation data as a separate dataset. As there may be plans to enhance the Aviation program in the future it should be a standalone program.

## **Section I: FIRE TECHNOLOGY**

### **Executive Summary**

*The executive summary should be a consolidation of key findings, program plans, and participants that contributed to the review*

Overall, our statistics for the Fire Technology Program are consistently strong, with high success and course completion rates indicating effective curriculum and teaching practices. On-campus class enrollment, student success, and SLO success have increased over the last two years. However, the Fire Technology Program has seen a decline in overall enrollment due to the loss of our FS60A training for fire camps and adjustments related to these changes. The closure of the CCC prison resulted in the loss of a longstanding component of our program that had been in place since 2010. The initial announcement of the CCC closure was made in 2021, and the last class of incarcerated students enrolled in an LCC FS 60A class through the Susanville Training Center was on October 18, 2022. All training for fire crews was transferred to the southern Jamestown facility, which led to the evacuation of the Susanville Training Center. CCC was officially closed in June 2023. This represents a significant loss for the program, as we will not be able to maintain our previously high level of FTEs. The Fire Program is actively seeking ways to counteract this loss but will not be able to replace those large numbers anytime soon.

Our Alturas Cal Fire Academy has proven to be a substantial draw for students from outside the area due to the availability of housing for academy cadets. However, locally, the current housing situation serves as a constraint on the on campus program's growth. To address this, we will explore the feasibility of a "sleeper program" in collaboration with local fire agencies. This program could potentially provide housing for degree-seeking students while simultaneously offering valuable work experience within these agencies. Additionally, the cost of out-of-state tuition presents another significant barrier to the growth of the Fire Technology Program. Current college policy restricts access to the Western Undergraduate Exchange (WUE) program, which offers reduced tuition for undergraduate students,

exclusively to degree-seeking students, thereby excluding our academy students. We recommend that this policy be reviewed and extended to include students pursuing certificates, incentivizing participation from out-of-state students in our programs. When the WUE was originally offered to Certificate of Achievement students (ie.. Cal Fire Academy) there were a handful of students that attended from the Reno Sparks area. This is no longer the case.

The Fire Technology Program has continued to adapt and expand since the last IPR. We are recovering from the closure of the Susanville Training Center and the consequent loss of program FTEs by increasing on-campus programming and focusing on a small group of current justice-impacted students located at the HDSP firehouse. In the previous IPR cycle, we established a pathway for the HDSP firehouse students to pursue a Fire Technology degree. In this cycle, we have continued to enhance the fire training available to these students through our ongoing partnership with Cal Fire. We have added the FS 60C Cal Fire Module 1C: Wildland and FS 60.1 Cal Fire Module: Structure classes to the training at the HDSP firehouse. This provides students with the opportunity to obtain their IFSAC Pro Board Fire Fighter 1 professional certificate, which is crucial for promotion in many fire agencies. This initiative increases access to professional firefighting certificates and encourages rehabilitation for justice-impacted individuals.

Since Lassen Community College is situated in a rural area with fewer resources than many accredited state fire training academies, attaining an IFSAC Pro Board Fire Fighter 1 Certificate presents a unique challenge for local community and volunteer firefighters. These local firefighters may not be able to leave the area for extended periods to attend SFT academies due to family, work, or other obligations. The Lassen Community College Fire Technology Program has entered into a new collaboration with Shasta College to allow both Cal Fire Academy students and local volunteer firefighters to participate in a Fire Control 3 Live Fire class, providing access to the capstone testing necessary to attain an IFSAC Pro Board Fire Fighter 1 professional certificate. This initiative not only enhances fire training within the local community but also strengthens local emergency response.

Our Fire Technology Program Director/Instructor has continued to oversee our on-campus program, which has seen substantial gains. Our partnership with Cal Fire LMU has enabled us to continue offering onsite and offsite Module 1C: Wildland and Module 1B: Hazardous Materials academies, along with a spring Module 1A: Structure academy. We have been able to conduct Cal Fire Modules 1C and 1B wildland academies at the Cal Fire Devils Garden facility in Alturas. The use of this facility for housing over the past couple of years has enhanced the program's popularity. In the Fall of 2023, we began to offer our FESHE classes in an online format, significantly increasing our on-campus population pursuing degree coursework. Additionally, we have expanded sections of our FS 65A Driver Operator 1A and FS 65B Driver Operator 1B series to other local communities in need of fire training, including fire agencies in Bishop, June Lake, Chester, and Markleville. In the Summer of 2023, we initiated offerings of FS 72C Haz Mat FRA and FS 132 Critical 32 to USFS firefighters to enhance the SCBA training of their wildland firefighters. We plan to continue offering these courses in partnership with the USFS this summer on a long-term basis. Our

student success and retention rates remain high, and the number of degrees awarded has increased during this current IPR timeframe.

The program has continued to adjust its offerings to meet the needs of various agencies, each with it

- **Local volunteer agencies** have supported our program from the beginning and provide many students. Scheduling for volunteers differs from that of professionals, as volunteers cannot take time off from work for classes. Therefore, volunteer classes are usually scheduled for weekends, including 40-hour classes that are split over weekends. These classes are typically skill-based and short-term, such as the driver operator series, which is offered in a split weekend format. Due to the variability of volunteer needs, the director maintains communication with most local fire chiefs and schedules classes for volunteers on an as-needed basis.
- **Professional firefighters** represent another significant student category. These students typically seek the same classes as volunteers but often in a different format. Classes for professional firefighters are generally 40 hours long and offered in a week-long M-F format, covering career development topics, such as the company officer series, driver/operator series, rope rescue, vehicle extrication, and advanced wildland classes. Students from this category typically come from the Cal Fire JAC program or municipal fire departments. We have modified our offerings to allow these firefighters to complete the JAC series or the Fire Officer series within two semesters, resulting in steady enrollment over the past two years.
- **Federal fire agencies**, including the Bureau of Land Management and the United States Forest Service (Lassen National Forest), had an institutional agreement with LCC to provide entry-level firefighter training. However, with changes in these agencies that increased in-house training, that agreement was dissolved in 2023. We continue to partner with BLM to offer National Wildfire Coordinating Group (NWCG) classes, and Lassen College provides SCBA training for engineering modules on the Lassen National Forest.
- **Lassen College degree-track students** are also part of our programming. Our degree-seeking students can take any of the aforementioned classes as long as they meet prerequisites. Several entry-level skill-based elective classes qualify students for employment with our partner agencies. In addition to the on-campus degree program, we support a parallel degree program at the High Desert prison firehouse. Managing these two parallel programs requires a large number of part-time instructors and is quite challenging. However, the prison program has produced at least 2 or more degree recipients each year, most of whom have advanced their fire careers upon release from prison. Our on-campus degrees have remained steady at 1 or 2 per year over the last two years. The program is developing feeder programs to generate interest in a fire degree, and enrollment in core classes has increased over the past two years as a result. We have also adjusted our scheduling of core classes to accommodate athletic practices, responding to coach feedback about athletes interested in the program. This change was made in Fall 2022 and has seen limited interest from athletes, although we are seeing interest grow over the last few semesters. Over the past two years, the program has developed three pathways into our degree program. The Cal Fire Academy has been the most successful, with some graduates returning to enroll in the degree

program. The high school pathways also show promise, as 3 out of 5 students from the original 2021 program have returned to pursue a degree. However, we were unable to continue those pathways due to a lack of instructors. Many of our students, being active firefighters, are not available for classes year-round. In Spring 2024, we also started offering our degree core classes in an online format to increase access for our professional students. Establishing short-term general education coursework would also be beneficial, providing working firefighters with increased access to degree completion. The development of online fire courses has already boosted our enrollment, and we will need time to evaluate whether this translates into a higher attainment of degrees for this population. Additionally, the Susanville Indian Rancheria fuels crew is being developed as another potential feeder program into our degree track. Developing additional feeder programs will be a priority for the program in the coming years.

Student survey data for the Fire Technology Program was unavailable for this report.

### **Program Needs:**

- 1) The old engines are costly and unreliable. Our engines are showing the signs of being in the elements for years and deferred maintenance has made repairs difficult and never ending. While we are making progress, their upkeep is exceeding their value, but they are crucial for the Driver/Operator Series (FS-65A and B), which is an expanding program as well as our Academies. The director is seeking engine donations or low cost purchases to support this program.
- 2) The Cal Fire Academies, FS-60C and 60.1, have the potential to expand. This current academy formation serves as a base training towards becoming a State Fire Training (SFT) accredited academy in the future. To support the Cal Fire Academy and a future SFT accreditation, the program will need an investment in training props, including a future three story training tower as well as a number of training props to support the program.
- 3) Additionally, there are a few classes that will require additional equipment to support the curriculum and the Student Learning Objectives.
- 4) Purchase an additional storage container. For ladder drills and FF survival class
- 5) Our Firefighter Academies are held in the evening and usually extend until after dark especially with the changes of the seasons. To enhance safety, our Training area by the equipment cache would benefit greatly from having stadium type lighting mounted on the poles that surround the training grounds.
- 6) Additional Training equipment:
  - 1- 24 foot extension Ladder
  - 2 Updated Hydrant located at preschool playground
  - 3 3 sets of turn outs annually to meet NFPA standards(needed for Live Fire)
  - 4 Continue funding for Consumables, Engine repair, equipment testing.

In summary, the on-campus and High Desert Firehouse programs are performing well. If we exclude the loss of the FS-60A classes, the program has seen a net gain in enrollment and achieved a very high success rate and retention rate. Our success is not only reflected in certificates and degrees but also, more critically, in our success rate of getting our students employed in the fire service. We achieve this through various avenues, including Cal Fire, US Forest Service, Bureau of Land Management, Susanville Indian Rancheria, local fire contractors, and local volunteer fire agencies.

If anything could be improved upon for measuring instructional effectiveness, it would be finding a way to capture employment statistics after students leave the program. This is an important measurement for our program, as not all of our students are interested in earning a degree. Anecdotally, we have tracked almost 75 students through our program and into employment over the last two years with an estimated 95% job placement, but we have no way of validating this.

**Future Plans for our program include:**

- Continue implementing the Forestry degree.
- Develop partnerships with private Forestry companies such as SPI and Collins Pines.
- Implement an internship program and possible additional route for employment.
- Find and hire full-time Forestry Instructor.
- Continue developing the partnership with SIR and support their fuels/Fire crew.
- Increase advertisements and social media presence.
- Offer online and Hybrid degree track classes to increase enrollment.

## **SECTION 1: ACADEMIC PLANNING**

*Program Overview, Objectives, and Student Learning Outcomes*

- *Describe the program (types of degrees offered, jobs/industries/transfer pathways associated with the program, faculty members in program)*
- *Describe and evaluate the program objectives against the LCC strategic plan, specifically the mission statement and strategic goals*
- *Evaluate any changes in the program since last review. Include summary of Annual Updates completed since last review. Regular program assessment will drive program improvements.*

**PROGRAM DESCRIPTION:**

The Lassen Community College Fire Technology Program (LCC FTP) is designed to equip students with the skills and knowledge necessary for successful careers in the Fire Service. The program provides high-quality instruction for both entry-level students and fire service professionals seeking to advance their training in both urban firefighting and wildland fire suppression. Depending on their professional goals, Fire Technology students can earn an Associate of Science Degree in Fire Technology, a Certificate of Achievement in Fire Technology, a Certificate of Achievement in Basic Wildland Firefighting, a Certificate of Achievement in Cal Fire Academy (FF1A, FF1B, FF1C, Cal Fire Orientation), or they may participate in stand-alone fire courses that provide industry-based certifications.

These pathways allow LCC FTP to serve a diverse population, including:

- **CCC/HDSP Firehouse (incarcerated):** Providing access to our AS degree and Certificate in Fire Technology for incarcerated students employed at the High Desert State Prison (HDSP) Fire Department (Firehouse). As Hughes and Wilson (2020) note, “At least 95 percent of people in prison will eventually be released, and their ability to access and complete some form of a college degree or credential will increase their chances of overcoming post-incarceration barriers. Going from prison to earning a college degree or credential opens the doors to new possibilities of careers, economic mobility, housing, health care, civic engagement, and the uplifting of entire families and communities.”
- **Local community members interested in entry into the fire service.** Our Basic Wildland Firefighter, Fire Technology, and Fire Academy certificates provide the training needed for entry-level firefighting positions. Graduates are employed by agencies such as the United States Forest Service, Bureau of Land Management, Cal Fire, and local fire departments.
- **Professional and Volunteer firefighters and professional contractors:** Seeking to attain or maintain industry-based certificates. For example, we offer Cal-JAC courses required by local Cal Fire professional firefighters. We also offer a stand-alone Incident Safety Awareness class for Heavy Equipment Operators, providing industry-based certification needed to work on the fire line as private contractors.
  - **Federal agencies:** We maintain an ongoing partnership with federal agencies such as USFS and BLM to provide training to their fire employees. Classes these agencies participate in include National Wildfire Coordinating Group courses offered through our instructional contracts with the agencies.
- **Susanville Indian Rancheria Partnership** offers the Wildland Firefighter training to the newly formed SIR fuels management crew.

Fire Courses offered for Professionals in the Fire Service can be found in the Appendix A. While the primary goal of the LCC FTP is to prepare students for employment and Fire Technology students who complete our certificates meet federal and state requirements for entry-level firefighting positions; students may continue beyond our AS Degree with additional classes to transfer to California State University or University of California, which offer Bachelor and higher level degrees.

We enjoy multiple partnerships with fire agencies, including the United States Forest Service, Bureau of Land Management, Lassen County Fire Officers Association, and Cal Fire, Lassen-Modoc Unit, who provide employment opportunities for our Fire Technology students. Positions that students can be employed in include: Entry-Level Firefighter, Fire Captain, Apparatus Operator/Engineer, Fire Prevention Inspector, Hot Shot, Code Enforcement Officer, Public Education Officer, and various private industry prevention and suppression opportunities.

LCC FTP currently includes (55) individual courses, streamlined from the (58) listed in the last review, reflecting the latest industry standards and the needs of our local agency partners. Classes are updated to meet industry standards, including federal and state requirements, through National Wildfire Coordinating Group (NWCG), Office of the State Fire Marshal, and State Fire Training (SFT) compliance on an ongoing basis.

### **Objectives for the Fire Technology Program:**

The Fire Technology Program aims to prepare students for successful careers in the fire science industry. Both the Associate Degree in Fire Technology and the Certificate of Achievement in Fire Technology offer students and employers verifiable benchmarks of technical and career proficiency. The Basic Wildland Certificate of Achievement and the Cal Fire Academy Certificate of Achievement provide training that meets industry standards for entry-level firefighter positions. Furthermore, stand-alone courses are available to provide professional Fire Service personnel with industry-based certifications designed to enhance their knowledge and skills, ultimately enabling them to effectively apply these advancements within their professions. The curriculum is designed to develop the following skills and techniques:

- a. A comprehensive understanding of various fire service roles, including Firefighter, Fire Inspector, Fire Investigator, Supervisors, and Managers.
- b. Workplace safety protocols and orientation.
- c. The cultivation of a strong work ethic, encompassing principles of responsibility, discipline, and initiative.
- d. Mastery of technical language, vocabulary, equipment, materials, and operational procedures.
- e. A broad foundation of the mental and physical skills required for effective performance in firefighting environments.
- f. Professional development to foster career advancement and success.

### **Program Student Learning Outcomes:**

Upon completion of the Associate in Science Degree in Fire Technology, and the Certificate of Achievement in Fire Technology, the student will be able to:

1. Safely perform basic firefighting skills as part of the Incident Command System in preparation for an entry-level position at most firefighting agencies.

Upon completion of the Basic Wildland Firefighter Certificate of Achievement, the student will be able to:

1. Demonstrate an understanding of Basic Wildland fire terminology, firefighting methods and safe and efficient use of firefighting tools.
2. Explain, in detail, the organization of fire agencies and how the chain of command is used at incidents and day to day operations.
3. Apply critical thinking skills to ever changing situations such as crew dynamics, and wildland and all risk fire and rescue incidents
4. Be academically and physically prepared to obtain an entry-level position in any of the wildland organizations, and be a productive and motivated member of a fire crew.

Upon completion of the Cal Fire Certificate of Accomplishment, the student will be able to:

1. Function effectively, safely, and cooperatively as a member of a wildland fire suppression crew; develop skills in the use of tools for wildland fire suppression and their maintenance.

**The Fire Technology Program's mission and goals support Lassen Community College's Mission Statement and Strategic Goals in the following ways:**

**LCC Mission**

*Lassen Community College provides outstanding programs for all pursuing higher education goals. The core programs offer a wide range of educational opportunities including transfer degrees and certificates, economic and workforce development, and basic skills instruction. The College serves diverse students, both on campus and in outreach areas in its effort to build intellectual growth, human perspective and economic potential.*

**Fire Technology:**

- Provides students with diverse educational opportunities and several pathways for success and employment.
- Serves a large area which attracts a wide range of students from different socioeconomic economic backgrounds.

**LCC STRATEGIC GOALS:**

1. **Institutional Effectiveness:** *Provide the governance, leadership, integrated planning and accountability structures, and processes to effectively support the learning environment, while ensuring responsible stewardship of public trust and resources.*

**Fire Technology:** Program direction is dictated by an advisory committee. Overall program is managed by a Director who is held accountable to both the Advisory Committee, Lassen College Administration, Faculty and LCC students.

2. **Learning Opportunities:** *Provide an array of rigorous academic programs delivered via a variety of modalities that promote student learning and meet the needs of the local and global community.*

**Fire Technology:** Offers a variety of classes to meet the needs of our students. From entry level to professional development classes, the program is designed to meet the needs of our fire community.

3. **Resource Management:** *Manage human, physical, technological and financial resources to sustain fiscal stability and to effectively support the learning environment.*

**Fire Technology:** Director determines needs of the program through instructor and advisory committee input then prioritizes and allocates resources accordingly.

4. **Student Success:** *Provide a college environment that reaches-out-to and supports students, minimizes barriers, and increases opportunity and success through access and retention to enable student attainment of educational goals including completion of degrees and certificates, transfer, job placement and advancement, improvement of basic skills, and self-development through lifelong learning.*

**Fire Technology:** ensures students success by providing guidance and learning opportunities from initial contact and counselling to successful employment. Connects students with employment opportunities through our community partnerships with local, State and Federal fire agencies.

### **Identify and Evaluate the Program Student Learning Outcomes**

*All Program Student Learning Outcomes link to the Institutional Student Learning. Outcomes in the following ways:*

***Communication Skills*** – Ability to listen and read with comprehension and the ability to write and speak effectively:

**Fire Technology:** students are required to be able to effectively communicate both verbally and in writing. Program faculty require students to prepare written reports, conduct research and make oral/written presentations, employing logic and argument to support conclusions.

***Critical Thinking*** – Ability to analyze a situation, identify and research a problem, propose a solution or desired outcome, implement a plan to address the problem, evaluate progress and adjust the plan as appropriate to arrive at the solution or desired outcome:

**Fire Technology:** Students are taught problem solving skills and are exposed to a variety of scenarios and incidents. Instructors assist students with working through the steps of problem solving and understanding the ramifications of decisions.

***Life Long Learning*** – Ability to engage in independent acquisition of knowledge; ability to access information including use of current technology; ability to use the internet and/or library to access and analyze information for relevance and accuracy; ability to navigate systems:

**Fire Technology:** Students learn how to research issues and evaluate the validity of information through the use of textbooks, periodicals, library resources, and internet resources. Additionally, students may input data and complete reports using various sources of technology such as computers, portable communication devices and the internet.

***Personal/Interpersonal Responsibility*** – Ability to develop and apply strategies to set realistic goals for personal, educational, career, and community development; ability to apply standards of personal and professional integrity; ability to cooperate with others in a collaborative environment for accomplishment of goals; ability to interact successfully with other cultures:

**Fire Technology:** Students are instructed in ethical decision making and problem solving and are expected to exhibit ethical values and take personal responsibility in coursework attempted. Faculty, with many years of experience maintain professional contacts with industry representatives and are able to channel motivated and qualified students into jobs in which basic skills and classroom theory that can be applied in real world situations. Further, students are encouraged to challenge themselves by competing in selection processes for positions in the Fire service and often receive personal mentoring from faculty members. Students are encouraged to act in a professional manner and treat all members of the public with respect and dignity.

### **Evaluate any changes in the program since last review:**

Since the completion of the last program review, LCC FTP has continued to contend with lower FTES. This was primarily caused by the closure of the CCC, which significantly impacted the program's science offerings in 2010, and also by changes in agency priorities that resulted in alterations to our long-standing agreements with the Lassen National Forest. Despite these challenges, LCC FTP has continued to create, develop, and deliver essential fire training for our local populations.

One of the most notable accomplishments has been the partnership to offer SCBA training to the United States Forest Service, Lassen National Forest. This required training is offered annually to the Lassen National Forest.

Beginning in Fall 2025, LCC will offer introductory Forest Management classes to local high school students through a pathways program. This program aims to foster a greater appreciation for the environment and the important role forests play in maintaining ecological balance, ensuring biodiversity, and preventing wildfires.

We continue to build our fire and forestry programs, but are limited by a lack of instructors willing to teach at LCC. The recent addition of a full-time Fire Faculty member to our existing staff should increase the reliability of our offerings and allow for the needed expansion of our program.

Given the rise in large wildfires both in our local areas and throughout the state, LCC FTP has seen an increased need for firefighter training and, consequently, an increase in our on-campus programming. To reach a broader population, we have increased the frequency of some of our introductory fire courses. For example, FS 61 Basic Fire Fighter (Basic 32), which includes all the required NWCG industry certifications for entry-level federal firefighter positions, will be offered twice a year. We have also increased the frequency of our FS 5-Fire Orientation and Organization class, which will be offered every Fall, and have altered the times at which we offer many of our core classes to accommodate athletes attending Lassen College who may be interested in joining the fire service. Furthermore, we have begun offering our FESHE courses online to enhance degree attainment for professionals.

The program has experienced remarkable growth in both our programming and career pathways over recent years. Specifically, in the 2021-2022 academic year, we proudly introduced an additional Cal Fire Academy located in Alturas, CA, which has significantly expanded our reach and influence in the region. This addition complements our existing academies, allowing us to offer a total of two Cal Fire Module 1C Wildland and IB: Haz Mat academies and one Cal Fire Module 1A: Structure academy per academic year since then.

This expansion has not only increased the number of training opportunities available to aspiring firefighters but has also enhanced the overall quality of education and resources we provide. Each academy is designed to equip students with the skills, knowledge, and hands-on experience necessary to thrive in the competitive field of firefighting and emergency response.

As we look to the future, we are committed to further enhancing our curriculum and resources, providing our students with up-to-date training that reflects the latest advancements in firefighting techniques and technology. This ongoing growth reflects our dedication to preparing the next generation of firefighting professionals and ensuring that they are equipped to meet the challenges of the job and serve their communities effectively.

## Student Achievement and Learning Outcomes

### Trends and Patterns in Student Achievement

#### Course Success Rates

Course Success Rate	2020-21	2021-22	2022-23	2023-24
<b>Program-Level</b>				
Fire Technology Overall Success Rate	95%	97%	95%	95%
Lassen College Success Rate	77%	78%	78%	80%
<b>Course-Level</b>				
EMT-21 Emergency Medical Responder	98%	88%		
FS-13: Fire Behavior and Combustion	92%	100%	68%	100%
FS-132: Critical 32				100%
FS-14: Principles Fire Safe/Survival	100%	100%	95%	100%
FS-156: Pump Operations	100%			
FS-20: 1st Aid/Cpr Pub Emp	88%	96%	100%	100%
FS-23: Firing Operations (S-219)		100%	100%	
FS-3: Fund. of Fire Prevention	80%	100%	100%	80%
FS-49: Fire Science Cooperative Work Experience	95%	88%	94%	87%
FS-4: Fire Protection Equipment	92%	81%	100%	70%
FS-5: Intro Fire Protection Emer Ser	86%	87%	89%	65%
FS-50: Rapid Intervention Crew Oper	100%	100%	100%	
FS-51: Intro to Fire Careers	100%	92%	100%	100%
FS-57: Common Passenger Vehicle Rescu	100%	100%	100%	100%
FS-59: Confined Space Awareness	100%	100%	100%	98%
FS-6: Bldgconstr for Fire Protection	85%	100%	77%	100%
FS-60: Cal Fire Firefighter Academy	84%	92%	84%	
FS-60.1: Calfire Module 1A Structural F				96%
FS-60A: Basic Fire Crew Fire Fighter	88%	89%	63%	
FS-60C: Cal Fire Module 1C Wildland Ff				85%
FS-61: Basic Firefighter (basic 32)	90%	97%	81%	77%
FS-64: Instructor 1	88%	100%	100%	100%
FS-64B: Instructor II	100%			
FS-65A: Driver Operator 1A	100%	100%	100%	100%
FS-65B: Driver Operator 1B	100%	100%	100%	95%
FS-65C: Wildland Fire Apparatus Oper		100%	100%	100%
FS-70A: Single Resource Academy			100%	
FS-72: Hazmat First Responder Operati	100%	96%	100%	93%
FS-72B: Hazmat First Responder- Decont	100%		100%	100%
FS-72C: Hazmat First Responder Awarene				94%
FS-72IC: Hazmat Incident Commander				100%
FS-73A: Incident Bus. Management S-260		100%	100%	
FS-74: Fire in the Interface (S215)		100%	100%	
FS-75: Intermediate Wildland Fire Beh		100%	100%	
FS-76: Firefighter Type 1 Squad Boss				100%
FS-78: Followership to Leadership		100%	100%	
FS-8: Wildland Fire Suppression	75%	100%	90%	
FS-80: Firefighter Survival	100%	100%	100%	100%
FS-81: Wildland Firefighter Safety	100%	97%	100%	100%

FS-85: Maps/Compass/GPS	100%	96%	100%	100%
FS-89: Fire Chainsaws (s-212)	100%	94%	97%	100%
FS-90: Portable Pumps/Water(s-211)	100%	100%	100%	100%
FS-92A: Company Officer 2A: HR Manage	100%	100%		
FS-92B: Company Officer 2B Gen Admin	100%	100%	100%	100%
FS-92C: Company Officer 2C: Fire Insp	100%	100%	100%	100%
FS-92D: Company Officer 2D All-Risk		100%	100%	
FS-92E: Company Officer 2E: Wildland		100%		
FS-94: Strike Team/Task Force Leader		100%		
FS-95: Initial Attack Incident Comm	100%		100%	
FS-96: Low Angle Rope Rescue	100%	95%	100%	
FS-96A: Rope Rescue Awareness/Operatio			100%	100%
FS-97: Fire Control 4	100%	100%		
FS-97A: Fire Cont 4A Liquidgas Aware/O				100%
FS-98.20: Incident Safety Hired Vendors	100%	100%	100%	100%
FS-98.21: Volunteer Firefighter Academy	81%	94%	71%	
<b>Modality</b>				
Alturas		96%	98%	98%
Cdcr/Fci F2f Education	97%	99%	99%	100%
Internet				61%
Main Campus	95%	96%	93%	93%
Other		100%	100%	95%

<b>Course Success Rate</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
<b>Program-Level</b>				
Fire Technology Overall Success Rate	95%	97%	95%	95%
Lassen College Success Rate	77%	78%	78%	80%
<b>Gender</b>				
Female	100%	99%	95%	91%
Male	95%	97%	95%	94%
Unreported	100%	100%	100%	100%
<b>Ethnicity</b>				
American Indian or AK Native	100%	100%	89%	92%
Asian	100%	89%	100%	97%
Black or African American	100%	96%	80%	100%
Hispanic or Latinx	99%	96%	96%	94%
Pacific Islander or HI Native	0%	100%		100%
Two or More Races	100%	95%	100%	93%
Unreported	100%	98%	97%	75%
White	95%	98%	95%	93%

**Discussion:** In general, the Fire Technology program meets or exceeds the guidelines for retention and success. It is our goal to maintain these numbers. The overall success rate for the Fire Technology program has been consistently high at 95% over the past three years. This rate is also above Lassen College's overall success rate, which reached a high of 80% in

2023-2024. The success rates for the Fire Technology Program are also consistently high at our Firehouse and Alturas Academy locations, ranging from 96% to 100%.

**Ethnicity and Gender Discussion:** The success rates among genders, ethnicities, and age groups have remained high and relatively equal over the last three academic years. The program is dedicated to the success of all equity categories. However, our enrollment has declined due to the reduction in FS 60A students, resulting from the phasing out and eventual closure of the FS 60A incarcerated firefighter training program. This closure was prompted by CDCR's prison reduction and closure policies. The table above shows that the success rates among all students continuing in our Fire Technology programs are above the rates for Lassen College in general. The goal of the program is to produce highly trained and motivated firefighters for employment with our agency partners.

## Course Retention Rates

Course Retention Rate	2020-21	2021-22	2022-23	2023-24
<b>Program-Level</b>				
Fire Technology Overall Retention Rate	97%	99%	97%	98%
Lassen College Retention Rate	88%	89%	90%	91%
<b>Course-Level</b>				
EMT-21 Emergency Medical Responder	94%	88%		
FS-13: Fire Behavior and Combustion	92%	100%	95%	100%
FS-132: Critical 32				100%
FS-14: Principles Fire Safe/Survival	100%	100%	95%	100%
FS-156: Pump Operations	100%			
FS-20: 1st Aid/Cpr Pub Emp	100%	98%	100%	100%
FS-23: Firing Operations (S-219)		100%	100%	
FS-3: Fund. of Fire Prevention	90%	100%	100%	90%
FS-4: Fire Protection Equipment	100%	81%	100%	97%
FS-49: Fire Science Cooperative Work Experience	95%	100%	98%	91%
FS-5: Intro Fire Protection Emer Ser	86%	87%	89%	90%
FS-50: Rapid Intervention Crew Oper	100%	100%	100%	
FS-51: Intro to Fire Careers	100%	100%	100%	100%
FS-57: Common Passenger Vehicle Rescu	100%	100%	100%	100%
FS-59: Confined Space Awareness	100%	100%	100%	100%
FS-6: Bldgconstr for Fire Protection	85%	100%	95%	100%
FS-60.1: Calfire Module 1A Structural F				96%
FS-60: Cal Fire Firefighter Academy	95%	97%	84%	
FS-60A: Basic Fire Crew Firefighter	92%	95%	78%	
FS-60C: Cal Fire Module 1C Wildland Ff				91%
FS-61: Basic Firefighter (basic 32)	100%	97%	84%	82%
FS-64: Instructor 1	88%	100%	100%	100%
FS-64B: Instructor II	100%			
FS-65A: Driver Operator 1A	100%	100%	100%	100%
FS-65B: Driver Operator 1B	100%	100%	100%	95%
FS-65C: Wildland Fire Apparatus Oper		100%	100%	100%
FS-70A: Single Resource Academy			100%	
FS-72: Hazmat First Responder Operati	100%	100%	100%	100%
FS-72B: Hazmat First Responder- Decont	100%		100%	100%
FS-72C: Hazmat First Responder Awarene				100%
FS-72IC: Hazmat Incident Commander				100%
FS-73A: Incident Bus. Management S-260		100%	100%	
FS-74: Fire in the Interface (S215)		100%	100%	
FS-75: Intermediate Wildland Fire Beh		100%	100%	
FS-76: Firefighter Type 1 Squad Boss				100%
FS-78: Followership to Leadership		100%	100%	
FS-8: Wildland Fire Suppression	75%	100%	90%	
FS-80: Firefighter Survival	100%	100%	100%	100%
FS-81: Wildland Firefighter Safety	100%	100%	100%	100%
FS-85: Maps/Compass/GPS	100%	100%	100%	100%
FS-89: Fire Chainsaws (s-212)	100%	100%	100%	100%

FS-90: Portable Pumps/Water(s-211)	100%	100%	100%	100%
FS-92A: Company Officer 2A: HR Manage	100%	100%		
FS-92B: Company Officer 2B Gen Admin	100%	100%	100%	100%
FS-92C: Company Officer 2C: Fire Insp	100%	100%	100%	100%
FS-92D: Company Officer 2D All-Risk		100%	100%	
FS-92E: Company Officer 2E: Wildland		100%		
FS-94: Strike Team/Task Force Leader		100%		
FS-95: Initial Attack Incident Comm	100%		100%	
FS-96: Low Angle Rope Rescue	100%	100%	100%	
FS-96A: Rope Rescue Awareness/Operatio			100%	100%
FS-97: Fire Control 4	100%	100%		
FS-97A: Fire Cont 4A Liquidgas Aware/O				100%
FS-98.20: Incident Safety Hired Vendors	100%	100%	100%	100%
FS-98.21: Volunteer Firefighter Academy	90%	94%	71%	
<b>Modality</b>				
Alturas		98%	98%	100%
Cdcr/Fci F2f Education	97%	99%	99%	100%
Internet				89%
Main Campus	98%	98%	95%	97%
Other		100%	100%	96%

Course Retention Rate	2020-21	2021-22	2022-23	2023-24
<b>Program-Level</b>				
Fire Technology Overall Retention Rate	97%	99%	98%	98%
Lassen College Retention Rate	88%	89%	90%	91%
<b>Gender</b>				
Female	100%	100%	97%	93%
Male	97%	99%	97%	96%
Unreported	100%	100%	100%	100%
<b>Ethnicity</b>				
American Indian or AK Native	100%	100%	91%	94%
Asian	100%	91%	100%	99%
Black or African American	100%	98%	82%	100%
Hispanic or Latinx	100%	98%	98%	96%
Pacific Islander or HI Native	0%	100%	0	100%
Two or More Races	100%	97%	100%	95%
Unreported	100%	100%	99%	77%
White	97%	100%	97%	95%

**Discussion:** The Fire Technology program generally meets or exceeds retention guidelines and consistently surpasses the overall retention and success rates of Lassen Community College. Over the past three years, the Fire Technology program's overall retention rate has remained consistently high, ranging from 97% to 99%. In contrast, Lassen Community College's retention rate has varied from 88% in 2020-2021 to 91% in 2023-2024. Our goal is to maintain these strong retention numbers.

**Modality Discussion:** During the timeframe of this IPR (Institutional Program Review), the program expanded to include an academy in Alturas, which demonstrates a retention rate between 98% and 100%. Our "firehouse" (likely referring to a specific location/offering) retention rate has also been consistently high, ranging from 97% to 100%. Retention rates on our main campus have remained high and stable over several years, ranging from 95% to 98%. Our online courses are a more recent addition and show a lower retention rate of 89%. This may reflect specific challenges faced by online learners. Additionally, it is possible that these core online classes are longer in duration than most of our electives and are open to a broader range of students. Some students may discover that fire technology is not a good fit for them or may face personal or work-related issues that prevent them from completing the class. Overall, the retention rates in Fire Technology are commendable, indicating a strong course structure and student support. Our goal is to maintain this success and these high retention rates through the next IPR.

**Ethnic and Gender Discussion:** Retention rates are relatively consistent across genders, ethnicities, and age groups over the last three academic years. The program is committed to the success of all equity categories. The program's ultimate goal is to produce highly trained and motivated firefighters for employment with our agency partners.

## Awards

<b>Degree and Certificates</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Fire Technology Degrees Awarded	8	7	5	8
Lassen College Degrees Awarded	345	297	392	360
Fire Technology Certificates Awarded	10	9	9	3
Lassen College Certificates Awarded	164	108	173	261
<b>Degree or Certificate Program</b>				
AS Fire Technology	8	7	5	8
Cert. of Achievement Fire Technology	10	9	9	3

## Achievement

*Based on your review of the data trends above (e.g., course success, retention, awards) please provide an analysis of achievement gaps and accomplishments in the program.*

## Equity

*Based on your review of the data trends above (e.g., course success, retention) please provide a narrative to outline opportunities to address any equity gaps.*

**Discussion:** The Fire Technology Department has established a robust academic presence, averaging seven degrees awarded each academic year. However, the 2023-2024 academic year saw a noticeable decline in the number of certificates awarded. This discrepancy, particularly when contrasted with the eight degrees conferred, warrants further examination.

A significant portion of Fire Technology students prioritizes the practical training required for entry-level positions within the fire service. Consequently, many may not complete their full educational programs, as their immediate goal is to enter the workforce. Importantly, not all students who successfully complete the Cal Fire Academy also pursue the Local Community College (LCC) Certificate of Achievement in the Cal Fire Academy. This is often due to students' employment timelines, with many opting to prioritize immediate job opportunities over completing their formal education.

Despite this, the future outlook for certification numbers is positive. The new opportunity for Firehouse students to participate in the Cal Fire Module 1A, 1B, and 1C training programs is expected to lead to a modest increase in the number of LCC Certificates of Achievement awarded in the Cal Fire Academy. These specialized training modules enhance students' skills and qualifications, making them candidates that are more competitive. As these training opportunities become more accessible, they may incentivize more students to pursue and complete their certificates, ultimately benefiting both the students and the fire service community.

## Student Learning Outcomes

- Provide an analysis of findings of the assessments completed and recommendations being made in individual assessments.
- Consider the impact or influence of the assessment results at the program level.
- Identify and evaluate the Program Student Learning Outcomes including the relationship between course, program and institutional student learning outcomes utilizing information provided by the Office of Institutional Effectiveness.

Course Assessed	Recommendations for Improvement
FS-13: Fire Behavior and Combustion	SLO met from 90 %-100%, no changes in SLO
FS-132: Critical 32	SLO met from 90 %-100% , no changes in SLO
FS-14: Principles Fire Safe/Survival	SLO met from 90 %-100% , no changes in SLO
FS-156: Pump Operations	SLO met from 90 %-100% , no changes in SLO
FS-20: 1st Aid/Cpr Pub Emp	Updated SLOs in Spring 2023
FS-23: Firing Operations (S-219)	SLO met from 90 %-100% , no changes in SLO
FS-26: Basic Air Operations (S-270)	SLO met from 90 %-100% , no changes in SLO
FS-3: Fund. of Fire Prevention	SLO met from 90 %-100% , no changes in SLO
FS-4: Fire Protection Equipment	SLO's updated in Fall 2023
FS-5: Intro Fire Protection Emer Ser	SLO met from 90 %-100% , no changes in SLO
FS-50: Rapid Intervention Crew Oper	SLO met from 90 %-100% , no changes in SLO
FS-51: Intro to Fire Careers	SLO met from 90 %-100% , no changes in SLO
FS-52: Intermediate Incident Command System for Expanding Incidents (ICS-300)	Reactivated class updated SLO mapping effective fall 2025
FS-57: Common Passenger Vehicle Rescue	SLO met from 90 %-100% , no changes in SLO
FS-59: Confined Space Awareness	Updated SLO's in Spring 2023
FS-6: Bldgconstr for Fire Protection	SLO met from 90 %-100% , no changes in SLO
FS-60.1: Calfire Module 1A Structural F	SLO met from 90 %-100% , no changes in SLO
FS-60: Cal Fire Firefighter Academy	Course inactivated as of Fall 2025
FS-60C: Cal Fire Module 1C Wildland Ff	SLO met from 90 %-100% , no changes in SLO
FS-61: Basic Firefighter (basic 32)	SLO met from 90 %-100% , no changes in SLO
FS-64: Instructor 1	SLO met from 90 %-100% , no changes in SLO

FS-64B: Instructor II	SLO met from 90 %-100% , no changes in SLO
FS-65A: Driver Operator 1A	SLO met from 90 %-100% , no changes in SLO
FS-65B: Driver Operator 1B	SLO met from 90 %-100% , no changes in SLO
FS-65C: Wildland Fire Apparatus Oper	SLO met from 90 %-100% , no changes in SLO
FS-70: Heavy Equipment Boss (s-236)	Adjusted SLO wording in Spring 2023
FS-70A: Single Resource Academy	SLO met from 90 %-100% , no changes in SLO
FS-72: Hazmat First Responder Operati	SLO met from 90 %-100% , no changes in SLO
FS-72B: Hazmat First Responder- Decont	SLO met from 90 %-100% , no changes in SLO
FS-72C: Hazmat First Responder Awarene	SLO met from 90 %-100% , no changes in SLO
FS-72IC: Hazmat Incident Commander	SLO met from 90 %-100% , no changes in SLO
FS-73A: Incident Bus. Management S-260	Adjusted SLO wording in Fall 2023
FS-74: Fire in the Interface (S215)	SLO met from 90 %-100% , no changes in SLO
FS-75: Intermediate Wildland Fire Beh	SLO met from 90 %-100% , no changes in SLO
FS-76: Firefighter Type 1 Squad Boss	SLO met from 90 %-100% , no changes in SLO
FS-78: Followership to Leadership	SLO met from 90 %-100% , no changes in SLO
FS-8: Wildland Fire Suppression	Updated SLO's in Spring 2023
FS-80: Firefighter Survival	SLO met from 90 %-100% , no changes in SLO
FS-81: Wildland Firefighter Safety	Adjusted SLO's in Spring 2023
FS-85: Maps/Compass/GPS	SLO met from 90 %-100% , no changes in SLO
FS-89: Fire Chainsaws (s-212)	SLO met from 90 %-100% , no changes in SLO
FS-90: Portable Pumps/Water(s-211)	SLO met from 90 %-100% , no changes in SLO
FS-92A: Company Officer 2A: HR Manage	SLO met from 90 %-100% , no changes in SLO
FS-92B: Company Officer 2B Gen Admin	SLO met from 90 %-100% , no changes in SLO
FS-92C: Company Officer 2C: Fire Insp	SLO met from 90 %-100% , no changes in SLO

FS-92D: Company Officer 2D All-Risk	SLO met from 90 %-100% , no changes in SLO
FS-92E: Company Officer 2E: Wildland	SLO met from 90 %-100% , no changes in SLO
FS-94: Strike Team/Task Force Leader	SLO met from 90 %-100% , no changes in SLO
FS-95: Initial Attack Incident Comm	SLO met from 90 %-100% , no changes in SLO
FS-96: Low Angle Rope Rescue	SLO met from 90 %-100% , no changes in SLO
FS-96A: Rope Rescue Awareness/Operatio	SLO met from 90 %-100% , no changes in SLO
FS-97: Fire Control 4	SLO met from 90 %-100% , no changes in SLO
FS-97A: Fire Cont 4A Liquidgas Aware/O	SLO met from 90 %-100% , no changes in SLO
FS 98.18: Annual Fireline Safety Refresher Training (RT-130)	Added SLO's in Spring 2023
FS-98.20: Incident Safety Hired Vendors	SLO met from 90 %-100% , no changes in SLO
FS-98.21: Volunteer Firefighter Academy	SLO met from 90 %-100% , no changes in SLO

**SLO Discussion:**

***Summary of Findings***

**1. Performance Metrics:**

- A significant majority of courses (over 85% of the listed courses) achieved Student Learning Outcomes (SLOs) met at a range of 90% to 100%. This indicates that students are successfully mastering the material being taught, and the curriculum is effectively delivering the intended educational outcomes.

**2. No Changes in SLOs:**

- For the courses with SLOs met at 90%-100%, there were no recommended changes to the SLOs, reinforcing the effectiveness of the current curriculum and teaching methodologies. This group includes foundational courses (e.g., FS-3: Fund. of Fire Prevention and FS-5: Intro Fire Protection Emer Serv.) as well as specialized courses (e.g., FS-72: Hazmat First Responder Operations).

**3. Updates and Adjustments:**

- Some courses have had updates to their SLOs within the last year, notably:
  - FS-20: 1st Aid/CPR Public Employee (Updated Spring 2023)
  - FS-4: Fire Protection Equipment (Updated Fall 2023)
  - FS-59: Confined Space Awareness (Updated Spring 2023)
  - FS-70: Heavy Equipment Boss (Adjusted wording in Spring 2023)
  - FS-73A: Incident Business Management (Adjusted wording in Fall 2023)

- FS-8: Wildland Fire Suppression (Updated Spring 2023)
- FS-81: Wildland Firefighter Safety (Adjusted in Spring 2023)
- FS-98.18: Annual Fireline Safety Refresher Training (Added SLOs in Spring 2023)
- These updates reflect our effort to keep the curriculum relevant and aligned with current best practices in the fire service and new state and national curriculum.

#### 4. **Course Reactivation:**

- FS-52 (Intermediate Incident Command System for Expanding Incidents) has a reactivation planned for Spring 2025, with updated SLO mapping. There has been renewed interest in incident command I-300, which is part of the Cal Fire JAC program, and we have been told that it is a hard class to find.

### **Recommendations for Improvement**

#### 1. **Continuous Evaluation:**

- While a high percentage of courses meet their SLOs, it is crucial to maintain an ongoing evaluation process to ensure the curriculum evolves in response to changes in the fire service and educational practices. Regular feedback from students and industry stakeholders can be beneficial.

#### 2. **Focus on Updated SLOs:**

- For courses that have recently updated SLOs, monitoring student performance and feedback should be prioritized to gauge the effectiveness of the changes. This will ensure that new goals are indeed enhancing learning outcomes.

#### 3. **Resource Allocation:**

- Where there is a low SLO success rate, we will allocate resources instructors teaching courses to support them in adapting their teaching strategies or materials as needed.

#### 4. **Enhancing Experiential Learning:**

Where applicable, integrating more hands-on training and simulations can help bridge the gap between theoretical knowledge and practical application, particularly in areas with high skill requirements such as FS-72 (Hazmat First Responder Operations).

### **Conclusion SLO evaluation**

Overall, the assessment results showcase a high level of achievement in meeting SLOs across fire science courses, with targeted improvements necessary for courses currently undergoing updates or reactivations. Our proactive approach to maintaining the relevance of SLOs and addressing the inactivation of courses illustrates a commitment to quality education in fire science. Moving forward, continuous feedback and adaptation will ensure that the programs remain effective and aligned with industry standards and expectations.

Program Student Learning Outcomes	Summarize Findings
<p><b><u>Fire Technology Associate of Science Degree</u></b>            PSLO 1: Safely perform basic firefighting skills as part of the Incident Command System in preparation for an entry-level position at most firefighting agencies.</p>	<p>From 2022-2024, this PSLO has been achieved with from 99% to 100% of Fire technology students. No change in PSLO at this time.</p>
<p><b><u>Fire Technology Certificate of Achievement</u></b>            PSLO 1: Safely perform basic firefighting skills as part of the Incident Command System in preparation for an entry-level position at most firefighting agencies.</p>	<p>From 2022-2024, this PSLO has been achieved with from 99% to 100% of Fire technology students. No change in PSLO at this time.</p>
<p><b><u>Basic Wildland Firefighter Certificate of Achievement</u></b>            PSLO 1: Demonstrate an understanding of Basic Wildland fire terminology, firefighting methods and safe and efficient use of firefighting tools.            PSLO 2: Explain, in detail, the organization of fire agencies and how the chain of command is used at incidents and day to day operations.            PSLO 3: Apply critical thinking skills to ever changing situations such as crew dynamics, and wildland and all risk fire and rescue incidents            PSLO 4: Be academically and physically prepared to obtain an entry-level position in any of the wildland organizations, and be a productive and motivated member of a fire crew.</p>	<p>From 2022-2024, PSLOs 1 thru 4 has been achieved from 100% of Fire technology students in this certificate track. No change in PSLO at this time.</p>
<p><b><u>Certificate of Achievement-Cal Fire Academy</u></b>            PSLO 1: Function effectively, safely, and</p>	<p>In 2022-2024, the Cal Fire Academy Certificate was adjusted from a certificate of Accomplishment to a Certificate of Achievement. The Cal Fire Certificate of Achievement is not accessible on the data dashboards as of the writing of this</p>

<p>cooperatively as a member of a wildland fire suppression crew; develop skills in the use of tools for wildland fire suppression and their maintenance.</p>	<p>report.</p>
<p><b>Recommendations for Improvement</b></p>	
<p><b>Discussion:</b> All Fire Technology Course outlines of record have been updated on the new LCC COR templates with added DEIA (Diversity, Equity, Inclusion, and Accessibility) language and other adjustments as required by the California Community College Chancellor's Office. Additional updates have been made to comply with regulating agencies such as Office of the State Fire Marshal, National Wildfire Coordinating Group, and Federal Emergency Management Agency.</p> <p>The high rate of compliance with our SLO's (Student Learning Outcomes) indicate that our instruction meets both the needs of the student, the college and the employers. Fire Technology Advising Plans are in Appendix H.</p>	

## Enrollment Management

Enrollment Management	2020-21	2021-22	2022-23	2023-24
Fire Technology Enrollment Overall	1,149	1,192	1,241	822
Lassen College Census Enrollment	12,243	11,847	11,195	11,922
Fire Technology Full-Time Equivalent Students (FTES)	85.5	80.94	87.5	56.2
Lassen College Full-Time Equivalent Students (FTES)	1,341.4	1,268.5	1,200.8	1,282.7
Fire Technology Number of Sections	53	85	77	69
Lassen College Number of Sections	751	812	766	772
Fire Technology Full-Time Equivalent Faculty (FTEF)	2.9	4.1	4.1	4.4
Lassen College Full-Time Equivalent Faculty (FTEF)	70.4	74.2	72.2	73.2
Fire Technology FTES/FTEF	13.8	14.0	14.6	12.3
Lassen College FTES/FTEF	19.1	17.1	16.6	17.5

Course Enrollment	2020-21	2021-22	2022-23	2023-24
<b>Program-Level</b>				
Fire Technology Overall Enrollment	1,149	1,192	1,241	822
Lassen College Enrollment	12,243	11,847	11,195	11,922
<b>Course-Level</b>				
EMT21: Emergency Medical Responder	54	16		
FS-13: Fire Behavior and Combustion	24	7	22	4
FS-132: Critical 32	0	0	0	37
FS-14: Principles Fire Safe/Survival	21	6	21	6
FS-156: Pump Operations	11	0	0	0
FS-20: 1st Aid/Cpr Pub Emp	16	48	56	34
FS-23: Firing Operations (S-219)	0	16	12	0
FS-3: Fund. of Fire Prevention	10	16	9	31
FS-4: Fire Protection Equipment	13	26	5	30
FS-49 Fire Science Cooperative Work Exp	20	26	52	47
FS-5: Intro Fire Protection Emer Ser	14	23	19	20
FS-50: Rapid Intervention Crew Oper	26	36	19	0
FS-51: Intro to Fire Careers	26	39	32	22
FS-57: Common Passenger Vehicle Rescu	17	41	22	27
FS-59: Confined Space Awareness	27	44	77	55
FS-6: Bldgconstr for Fire Protection	20	10	22	3
FS-60: Cal Fire Firefighter Academy	19	38	44	0
FS-60.1: Calfire Module 1A Structural	0	0	0	25
FS-60A: Basic Fire Crew Fire Fighter	405	208	258	0
FS-60C: Cal Fire Module 1C Wildland Ff	0	0	0	46
FS-61: Basic Firefighter (basic 32)	42	65	80	39
FS-64: Instructor 1	17	11	12	16
FS-64B: Instructor II	7	0	0	0
FS-65A: Driver Operator 1A	23	30	43	64
FS-65B: Driver Operator 1B	11	29	10	42
FS-65C: Wildland Fire Apparatus Oper	0	21	19	13
FS-70A: Single Resource Academy	0	0	14	0

FS-72: Hazmat First Responder Operati	33	50	45	46
FS-72B: Hazmat First Responder- Decont	11	0	7	10
FS-72C: Hazmat First Responder Awarene	0	0	0	18
FS-72IC: Hazmat Incident Commander	0	0	0	11
FS-73A: Incident Bus. Management S-260	0	6	15	0
FS-74: Fire in the Interface (S215)	0	12	23	0
FS-75: Intermediate Wildland Fire Beh	0	12	15	0
FS-76: Firefighter Type 1 Squad Boss	0	0	0	10
FS-78: Followership to Leadership	0	12	9	0
FS-8: Wildland Fire Suppression	8	8	10	0
FS-80: Firefighter Survival	22	50	53	22
FS-81: Wildland Firefighter Safety	27	38	43	19
FS-85: Maps/Compass/GPS	7	27	10	8
FS-89: Fire Chainsaws (s-212)	20	16	37	13
FS-90: Portable Pumps/Water(s-211)	12	12	17	5
FS-92A: Company Officer 2A: HR Manage	8	5	0	0
FS-92B: Company Officer 2B Gen Admin	17	7	12	13
FS-92C: Company Officer 2C: Fire Insp	13	8	10	17
FS-92D: Company Officer 2D All-Risk	0	7	6	0
FS-92E: Company Officer 2E: Wildland	0	8	0	0
FS-94: Strike Team/Task Force Leader	0	5	0	0
FS-95: Initial Attack Incident Comm	4	0	5	0
FS-96: Low Angle Rope Rescue	25	21	8	0
FS-96A: Rope Rescue Awareness/Operations	0	0	12	12
FS-97: Fire Control 4	12	36	0	0
FS-97A: Fire Cont 4A Liquidgas Aware/O	0	0	0	15
FS-98.20: Incident Safety Hired Vendors	76	80	49	42
FS-98.21: Volunteer Firefighter Academy	31	16	7	0
<b>Modality</b>				
Alturas		54	111	42
Cdcr/Fci F2f Education	233	212	148	150
Internet				37
Main Campus	437	589	552	455
Other		94	129	104

Enrollment	2020-21	2021-22	2022-23	2023-24
<b>Program-Level</b>				
Fire Technology Overall Enrollment	1149	1192	1241	822
<b>Gender</b>				
Female	63	72	57	59
Male	1,084	1117	1168	761
Unreported	2	3	16	2
<b>Ethnicity-Race-Ancestry</b>				
American Indian or AK Native	22	13	64	12
Asian	33	12	54	35
Black or African American	96	64	72	10
Hispanic or Latinx	313	308	350	190
Pacific Islander or HI Native	6	18	2	16
Two or More Races	40	36	53	43
Unreported	10	43	41	13
White	629	698	605	503

Based on your review of the data trends above (e.g., enrollment, FTES, FTES/FTEF) please provide an analysis of efficiency gaps and accomplishments.

**Discussion:**

The enrollment management chart indicates some important numbers for our program:

- **Fire Technology’s overall enrollment has generally hit a plateau.** The program is beginning to identify which class have consistent enrollment through the last 2 years and will begin to pare down our class offerings to make the program more efficient.
- **Current enrollment trend indicates that in all likely hood our class enrollment will level off to around 12-18 students per class.** Our efforts in the next 2 years will focus on adding students to increase the enrollment average to 18-20 students per class,
- **The Sharp decline in enrollment from 2022-2023 and 2023-2024 can be attributed to the loss of the CDCR’s FS-60A program and the loss of the USFS instructional contract.** This accounted for approximately 300 students with the loss of the corresponding FTE’s.
- **The reduction in FTES in the last few years appears to be related to the reduction of classes for the FS-60A classes offered at the Cal Fire Training Center at CCC.** With the FS-60A program gone, we will likely level off at the 80-85 FTE mark for our on campus offerings. By increasing the enrollment per class, we should be able to see an increase in FTE’s. This will be our goal for the next 2 years.
- **Our core degree classes fluctuate for every other year due to the classes being offered in an odd/even year format.** The low number in the off year is attributed to the CDCR firehouse program which is scheduled for all degree classes being offered in 1 year.
- **As of Spring 2025 We have completed one odd/even cycle of our online class offerings for our core classes and have found we have essentially doubled our degree track students.** It will be interesting to see what success that brings to the program
- **FTEF: Full-time Equivalent Faculty:** The amount of instructional employee time expressed in a proportion to that Faculty (FTEF) required in a full-time teaching position, with 1.0 representing one full-time position. FTE is derived by dividing the amount of time taught in a position by the amount of teaching hours required in a corresponding position.

Using the above as a definition, The FTEF of 4.4 indicates that the Fire Program is operating at a very high level with essentially 8 part time instructors over the past 2 years. With the limited availability of part-time instructors we are essentially working on part-time staff at twice their capacity. This is not a sustainable model and makes the case for hiring 1 additional full-time faculty for the fire program. As of this writing, a full time instructor shared with the EMS program has been hired.

**Discussion:** The above charts do exemplify the need to develop recruiting opportunities to include more diversity within our student ranks. Native Americans are an underserved population that could greatly benefit from what the fire program has to offer,

The enrollment chart for each course reveals some interesting statistics as well.

- **The SFT Company Officer classes, FS-92A-92E, saw a decline in enrollment from its initial offerings in 20/21.** These classes are offered in the same format across the state, and it is difficult to attract students from outside of the area to attend these classes at LCC. In 21/22, enrollment declined to an average of 7 or 8 students. The majority of these students were local, with only 1 or 2 being from outside the area. After talking with these students, they only took our class because they were on a deadline to complete their certifications. Additionally, these have been taught by contract instructors and are expensive for the college to host. Low enrollment coupled with high expenses is not a long-term sustainable model. These classes will be watched in the coming year and evaluated for their efficiency.
- **Our entry level classes have been our most successful offerings.** With most basic skill classes showing an initial increase in enrollment and holding steady over 2 academic years. This can be attributed to 2 Cal fire Academies per year
- **The prospect of knowing that the classes will lead directly to employment is very enticing for our students.**
- **The FS-65A and B Driver Operator Series is identified as an expanding program.** This series is required by vehicle code to accommodate the drivers license training and have Chiefs sign off on the FF endorsement for their Firefighters. Cal Fire and other agencies have recently adopted this and it appears that this may be a market to exploit.

**Plans to increase enrollment:**

- Develop and update classes that may be transferable to four-year colleges.
- Initiate feasibility study into developing late start/short term general education classes. These classes would provide a pathway for degree completion for students who have unique scheduling requirements due to seasonal fire employment.
- Increase advertising and develop a larger social media presence.
- Expand offerings of FS-65A and FS-65B
- Reduce the number of total course offerings and focus on increasing enrollment for the classes that show consistent enrollment.
- Continue to develop classes that meet the needs of “student pipelines” such as Cal Fire JAC classes, USFS Critical 32, ICS classes and Haz Mat classes.
- With the addition of a new Fulltime instructor, we will be revisiting the Fire club and

play an active role in community service and on campus activities. This exposure will aid in our ability to recruit new students.

- Collaborate with our work experience program to develop an in-house sleeper program that allows our degree students to stay with local fire agencies. This experience will enhance student learning while providing a unique solution to our housing issues.
- We will be researching the feasibility of starting a CERT (Citizens Emergency Response Team) program in partnership with the City of Susanville, which could create a “pipeline” of new student annually.
- The program will be researching the feasibility of starting a sleeper program with local fire agencies in order to house students that are part of our degree program.
- On or off campus Housing has been identified as a limiting factor for the success of our fire program. In this light, we will be pursuing alternatives to attract new students from out of the local area.

## Curriculum

### Degrees and/or Certificates

Degree or Certificate Title	Award Type (AA, AS, AAT, AST, etc.)	Units	Term of Last Revision
Associate in Science Degree in Fire Technology	Associate in Science	60	Fall 2024
Certificate of Achievement in Basic Wildland Firefighter	Certificate of Achievement	17.5	Fall 2024
CAL Fire Academy Certificate of Achievement	Certificate of Achievement	16	Fall 2024
Certificate of Achievement in Fire Technology	Certificate of Achievement	30	Fall 2024

**Discussion:** In 2023, the Cal Fire Academy Certificate of Accomplishment was updated to a Certificate of Achievement. This change was prompted by revisions to training requirements from state fire training. Furthermore, the degree electives were updated to align with changes in the state fire training curriculum; for example, Fire Control 4 was revised to Fire Control 4A, resulting in the corresponding change of FS 97 to FS 97A in the degree electives. Aside from these specific updates, no other modifications were made to degrees and certificates as of this review.

### Courses

Summarize curriculum revisions, new course adoptions, and/or course deletions since the last program review. Describe the program accomplishments and/or changes (e.g., major revisions, additions, etc.). All courses need to be submitted to the Curriculum Committee for revision at least once every five years.

The signed Instructional Program Curriculum Review Form is to be included with your completed program review documents for all certificates and degrees.

**Signed Instructional Program Curriculum Review Form is in Appendix B.**

Course Assessed	Last Offered	Term of Last Revision
EMT 21: Emergency Medical Responder	EMR transferred to Nursing in 2022	EMR transferred to Nursing in 2022
FS-13: Fire Behavior and Combustion	Fall 2023	9/3/2024
FS-132: Critical 32	Summer 2023	9/3/2024
FS-14: Principles Fire Safe/Survival	Spring 2024	5/7/2024
FS-156: Pump Operations	Spring 2021	9/3/2024
FS-20: 1st Aid/Cpr Pub Emp	Spring 2024	8/20/2024
FS-23: Firing Operations (S-219)	Spring 2023	8/20/2024
FS-26: Basic Air Operations (S-270)	Spring 2020	8/20/2024
FS-3: Fund. of Fire Prevention	Spring 2024	5/7/2024
FS-4: Fire Protection Equipment	Fall 2023	5/7/2024
FS-5: Intro Fire Protection Emer Ser	Fall 2023	5/7/2024
FS-50: Rapid Intervention Crew Oper	Spring 2023	8/20/2024
FS-51: Intro to Fire Careers	Spring 2024	9/3/2024

FS-57: Common Passenger Vehicle Rescu	Spring 2024	9/3/2024
FS-59: Confined Space Awareness	Spring 2024	9/3/2024
FS-6: Bldgconstr for Fire Protection	Summer 2023	5/7/2024
FS-60.1: Calfire Module 1A Structural F	Spring 2024	9/3/2024
FS-60: Cal Fire Firefighter Academy	Spring 2023, Inactivated 9/17/24	5/18/2021
FS-60A Basic Fire Crew Fire Fighter	Fall 2022, Inactivated 2/7/23	5/25/2021
FF-60B Fire Crew Firefighter (Cal Fire Seasonal)	Inactivated 9/17/24	1/18/2021
FS-60C: Cal Fire Module 1C Wildland FF	Spring 2024	9/3/2024
FS-61: Basic Firefighter (basic 32)	Spring 2024	9/3/2024
FS-64: Instructor 1	Fall 2023	9/3/2024
FS-64B: Instructor II	Spring 2021	9/3/2024
FS-65A: Driver Operator 1A	Spring 2024	9/3/2024
FS-65B: Driver Operator 1B	Spring 2024	9/3/2024
FS-65C: Wildland Fire Apparatus Oper	Fall 2023	9/3/2024
FS-70: Heavy Equipment Boss (s-236)	Spring 2019	9/17/2024
FS-70A: Single Resource Academy	Spring 2023	10/15/2024
FS 70B Engine Boss (Single Recourse)	Inactivated	9/17/2024
FS 70C Single Resource Crew Boss	Inactivated	9/17/2024
FS-72: Hazmat First Responder Operati	Spring 2024	9/3/2024
FS-72B: Hazmat First Responder- Decont	Spring 2024	9/3/2024
FS-72C: Hazmat First Responder Awarene	Summer 2023	9/3/2024
FS-72IC: Hazmat Incident Commander	Spring 2024	9/3/2024
FS-73A: Incident Bus. Management S-260	Spring 2023	9/17/2024
FS-74: Fire in the Interface (S215)	Spring 2023	9/17/2024
FS-75: Intermediate Wildland Fire Beh	Spring 2023	9/17/2024
FS-76: Firefighter Type 1 Squad Boss	Summer 2023	9/17/2024
FS-78: Followership to Leadership	Spring 2023	9/17/2024
FS-8: Wildland Fire Suppression	Spring 2023	8/20/2024
FS-80: Firefighter Survival	Spring 2024	9/17/2024
FS-81: Wildland Firefighter Safety	Spring 2024	9/17/2024
FS-85: Maps/Compass/GPS	Spring 2024	9/17/2024
FS-89: Fire Chainsaws (s-212)	Spring 2024	9/17/2024
FS-90: Portable Pumps/Water(s-211)	Spring 2024	9/17/2024
FS-92A: Company Officer 2A: HR Manage	Spring 2022	9/3/2024
FS-92B: Company Officer 2B Gen Admin	Spring 2024	9/3/2024
FS-92C: Company Officer 2C: Fire Insp	Spring 2024	9/3/2024
FS-92D: Company Officer 2D All-Risk	Fall 2022	9/3/2024
FS-92E: Company Officer 2E: Wildland	Fall 2021	9/3/2024
FS-94: Strike Team/Task Force Leader	Spring 2022	9/3/2024
FS-95: Initial Attack Incident Comm	Spring 2023	9/17/2024
FS-96: Low Angle Rope Rescue	Spring 2022, Inactivated 9/3/2024	9/3/2024
FS-96A: Rope Rescue Awareness/Operatio	Spring 2024	9/3/2024
FS-97: Fire Control 4	Spring 2022, Inactivated 10/15/2024	10/15/2024
FS-97A: Fire Cont 4A Liquidgas Aware/O	Spring 2024	9/3/2024

FS 97B: Fire Control 3	NEW	9/3/2024
FS 98.18 Annual Fireline Safety Refresher Training	Spring 2017	9/3/24
FS-98.20: Incident Safety Hired Vendors	Spring 2024	9/17/2024
FS-98.21: Volunteer Firefighter Academy	Spring 2023	9/3/2024

*Provide a narrative of revisions made.*

**Discussion:** Any revisions approved in fall 2024 were minor adjustments to Student Learning Outcomes SLO's and making minor changes to align with requirements for State Fire Training or National Wildfire Coordinating Group (NWCG) classes, which the majority of our classes follow.

- In 2024, we identified some classes that had not been offered for some time and did not meet our programming needs. These classes were discontinued.
- In 2024, we added FS 72IC Haz Mat Incident Commander to our curriculum due to requests from our local agencies.
- In Fall 2024, we revised the FS 52:ICS-300 class in curriculum at the request of local agencies.

**Articulation/Integration of Curriculum**

- Attach a tabular comparison of Lassen Community College courses articulating with UC and CSU, indicating courses with approved C-ID designations as applicable (Obtain copies of Articulation Agreements from the Transfer Center / Articulation Officer)
- Provide a narrative reviewing the Lassen Community College courses and courses at four-year institutions for course alignment. (e.g., two courses at Lassen needed to articulate with one course at UC) and the unit requirements for Lassen Community College courses as compared to four-year institutions.

2024-2025 Fire Technology Program Articulation						
LCC Fire Course #	FS 3	FS 4	FS 5	FS 6	FS 13	FS 14
FS Course Title	Fundamentals of Fire Prevention	Fundamental of Fire Prevention Equipment	Introduction to Fire Protection and Emergency Services	Building Construction for Fire Protection	Fire Behavior and Combustion	Principles of Fire Safety and Survival
*Potential CCC-CID Descriptor	FIRE 110X	FIRE 120X	FIRE 100X	FIRE 130X	FIRE 140X	FIRE 150X
California State University, Los Angeles (2024-2025 Agreement)	FPAT 2901 Fire Prevention	FPAT 2902 Fire Protection Systems	FPAT 2900 Principles of Emergency Services	FPAT 2903 Building Construction for Fire Protection	FPAT 2904 Fire Behavior and Combustion	FPAT 2905 Principles of Fire and Emergency Services Safety and Survival
Idaho State University (2022-2023 BS Fire Admin)	FSA 1103 Fire Prevention	FSA 1105 Fire Protection Systems	FSA 1106 Principles of Emergency Services	FSA 1101 Building Construction and Fire Protection	FSA 1102 Fire Behavior and Combustion	FSA 1107 Principles of Fire & Emergency Services Safety & Survival
Note: LCC Fire Classes do not currently have CI-D number, based on FESHE curriculum and other CC's our courses align with the CI-D numbers listed above.						

**Discussion:** Our Fire Technology core classes follow the Fire and Emergency Services Higher Education (FESHE) curriculum, which is followed by most college fire programs. Although Lassen College Fire Technology does not currently assign CI-D numbers to its classes, based on a review of other colleges following the FESHE curriculum, we have identified classes that would be eligible for a CI-D designation. Because the primary emphasis of the Fire Technology Program has been on employment preparation, we do not have a large number of articulation agreements. Our newest agreement is with California State University, Los Angeles, and is attached in the Appendix G. In the future, we also hope to establish agreements with Idaho State University and other schools that are developing four-year programs.

## External Compliance

Provide a summary of any compliance regulations (e.g., accreditation, accessibility), actions taken, and gaps identified.

Discussion: To issue industry-based certifications, Fire Technology faculty must meet National Wildfire Coordinating Group (NWCG) standards for wildland-based certificate courses and Office of State Fire Marshal - State Fire Training (SFT) standards for structure-based certificate courses.

The NWCG standards for course delivery, PMS 901-1, state:

"Non-member agencies or entities (e.g., educational institutions, contractor associations) may deliver NWCG training courses when the standards established in this publication are met. Non-member agencies or entities are encouraged to establish formal agreements with local or geographic area member agencies when delivering NWCG training. Such cooperative efforts are beneficial to the cooperators and to all students. For course completion certification, see Issuing the NWCG Training Course Completion Certificate."

<https://www.nwcg.gov/publications/pms901-1/nwcg-standards-for-course-delivery-pms-901-1> accessed on 2-19-2024.

In the "Issuing the NWCG Training Course Completion Certificate" section it states:

..." Educational institutions, contractor associations, and non-member agencies may issue successful students the NWCG Training Course Completion Certificate, PMS 921-1 for NWCG courses if one of the following conditions is met:

- The Lead Instructor is an authorized representative of an NWCG member agency
- The entity sponsoring the NWCG course has a formal agreement established with an NWCG member agency." ... <https://www.nwcg.gov/publications/pms901-1/nwcg-standards-for-course-delivery-pms-901-1> accessed on 2-19-2025.

To this end, LCC Fire Technology Program established a Memorandum of Understanding (MOU) with NWCG member agency, United States Department of Interior (USDI), Bureau of Land Management, Northern California District (BLM). Which runs from February 3, 2022 and it effective until one or both parties elect to terminate. This agreement is current and is expected to continue.

Currently, the LCC Fire Technology Program also has a contract with member agency United States Department of Agriculture (USDA), United States Forest Service (USFS) under agreement #21-CO-11050600-002 to allow for issuing of recognized NWCG certificates from January 1, 2021 thru December 31, 2027.

State fire Training Courses are categorized into the California Fire Services Training and Education System (CFSTES) with training course that lead to job function certification and the fire service Training and Education Program (FSTEP) courses, which include continuing education and topic-specific courses. All LCC Fire technology faculty who teach these courses

met these standards or we contract with professional experts so we can provide State Fire Training (SFT) courses within our local fire community. This is a costly practice as we often have an instructor of record who meets district requirement and additional professional experts who meet requirement for SFT courses. This would be aided by the hire of a full-time fire technology faculty member who would be able to meet both of these standards to provided the needed fire courses.

### **External Analysis: Job Market Assessment**

Provide a summary of Industry Advisory Board suggestions and market data. The market data will be populated for Career Technical Education programs only

Fire Technology Program Advisory Board members have shared that there is a great need in our local area for both firefighters who work in fire suppression and forestry technicians who work in the areas of ecosystem health, including fire prevention and restoration of ecosystems following fire. This need exists in both federal and state-level governmental jobs such as the USFS, BLM, SIR, and Cal Fire, as well as for firefighters who volunteer within local agencies such as local fire departments. The Program Endorsement Brief from the Centers of Excellence for Labor Market Research, dated November 2020, found the following:

- The Far North region found there will be 2930 jobs openings for fire Firefighters in 2025. Jobs for fire prevention workers are projected to increase by nearly 4% over the next five years. Jobs for forest and conservation technicians are projected to increase by nearly 14% over the next five years.
- Wage data shows that fire prevention workers and forest and conservation technicians tend to earn more than the subregion's living wage. Reported earnings for fire prevention workers range from a low of \$29 per hour for entry-level work to a high of \$52 per hour for experienced workers.
- Fifty-nine percent of existing fire prevention workers and 38% of existing forest and conservation technicians have education consistent with community college offerings (some college or associate degrees).
- According to the Centers of Excellence entry-level Firefighting Career in California Labor market analysis (2023). "Many community college firefighting programs are currently delivered as long-term, for-credit programs, but other formats might be more suitable for meeting training requirements, such as short-term certifications or noncredit programs. (Page 35 COE Report Labor market analysis) <https://coecc.net/california/2023/03/entry-level-firefighting-careers/NT>
- In the Public safety Far North Sub regional sector Profile, The center of Excellence for Labor Market research indicates that Public Safety Jobs are projected to have a 2% Job grow the from 2021 to 2026 (Page 3 COE Program Brief). <https://coecc.net/far-north/2023/10/public-safety-far-north-subregional-sector-profile/>
- According to the Bureau of Labor Statistics, the projected job growth for firefighters is around 4% from 2023 to 2033. Firefighters Occupational Outlook handbook <https://www.bls.gov/ooh/protective-service/firefighters.htm#:~:text=Employment%20of%20firefighters%20is%20projected%20to%20grow,the%20labor%20force%2C%20such%20as%20to%20retire.>

## **Program Planning and Communication Strategies**

Describe the communication methods and interaction strategies used by your program faculty and administrators to discuss program-level planning, curriculum, SLOs, PSLOs, equity, student achievement, and institutional performance data.

**Discussion:** The program has regularly scheduled advisory committee meetings. This is usually where our programming strategy starts as most of our committee members are currently employed in the industry. Additionally, the Director holds a Fire Faculty meeting each year and discusses the needs of the program and makes sure all faculty understands how the faculty's administrative duties are accomplished.

## **Academic Planning Analysis Summary**

Summarize the key findings from the program analysis and outline opportunities for change.

- The Fire Technology Program has consistently maintained agreements and contract needed to meet industry federal and state fire training standards
- Despite the variety and diversity of program pathways, retention and student success remains high, and consistently above the Lassen Community College rates.
- While enrollment for FS 60A's has reduced overall Fire Technology enrollment, the Fire Technology Director, Faculty and staff continue to pursue innovative programming to enhance enrollment.
- Remaining HDSP Firehouse program continues to demonstrate success through increase in degree completion.
- The Forestry program, supported by center of excellence data, started in the Fall of 2024 and has enrollment of approximately 8-10 students through the first semester. Additionally, The forestry program will be offering some classes online.
- Partnerships with Cal Fire and Susanville Indian Rancheria represent opportunities to increase on-campus enrollment. These partnerships should be pursued and strengthened when possible
- The Driver Operator series, FS-65A and FS-65B, may be an opportunity for expansion and could be a niche market that will increase LCC Fire Technology's competitiveness.

## Section 2: Human Resource Planning

### Workload and Staffing Assessment

Year	F/T Faculty	P/T Faculty
Previous Year	1	8
Current Year	1	8
Next 2 Years	2	8

*Provide a narrative that describes the program's faculty staffing trends and develop a projection for the two years. Discuss the extent to which your current faculty staffing structure meets or does not meet your program's needs and/or initiatives. Please describe what strategies will be used to diversify your staffing (e.g., education, expertise/skillsets, areas of interest, demographics).*

#### **Discussion:**

The Fire Technology program has greatly expanded our course offerings over the last 2 years. This expansion has been due to our part-time instructors, who have stepped up to provide instruction for classes within their specialties. Most of our part time instructors are employed full-time in the fire service and are only available at specific times, making it difficult for them to commit to teaching more classes for our program.

Due to the diverse populations served by Fire Technology, some faculty members are only available to teach certain classes. For instance, some faculty members only teach for the Cal Fire Academy and are not available to teach other fire classes in our schedule due to employment responsibilities within their agency. Similarly, faculty members teaching wildland classes through our contract with the US Forest Service (USFS) face similar limitations.

The pool of qualified local instructors is very limited, and despite local recruitment efforts, we have yet to secure new instructors. To address this issue, we have been offering fire instructor classes for the past two years, with the goal of developing local instructors who can teach specific classes. This process takes time, but we expect to see an increase in local instructor availability during the next Institutional Program Review (IPR) cycle.

For classes that require special certification, such as State Fire Training (SFT) classes, we must hire contract instructors because our part-time instructors do not possess the necessary certifications. This arrangement is costly for the college, as we must pay for both an instructor of record and a contract instructor. Additionally, some SFT classes require a specific student-to-instructor ratio for safety purposes. To meet these requirements, we must either limit enrollment or hire additional qualified instructors to maintain the safety ratio.

The program currently has one full-time instructor/director who helps to address any shortfalls, but we have found that this model is not sustainable due to time constraints. As the program's director, this instructor's time is split, with only 60% of their time allocated to instructional duties. Another Full time faculty who is split between EMS and Fire Technology has recently joined the Fire Tech Program which will be helpful with the instruction load

going forward. However, the need for specialized instructors within the Fire Technology Program still exists and will be a factor in applying to become an Accredited Academy through State Fire Training in the future.

## Professional Development

*Provide a description and associated outcomes related to the program's target professional development participation over since the last program review. Discuss the current professional development/training need(s) of your program, and why this need(s) exists. If you have specific trainings you want to request, please include those details.*

### Discussion:

Professional development is central to our efforts to create qualified instructors for the fire program. State Fire Training (SFT) classes are the most problematic for instructors to certify in. SFT policy and procedures state that an instructor must take the class to teach the class. In order to groom internal instructors to be qualified for SFT classes, we must send our instructors to SFT classes and initiate task books. We currently have two part-time instructors who have expressed interest in this process, which we will pursue in the next few years.

The Program Director and the Program Coordinator also attend state and local conferences annually which are invaluable for information exchange and developing partnerships with other fire program directors.

Estimated total costs for professional development would be approximately \$5000 annually.

## Section 3: Infrastructure Planning

### Facilities

- *Describe and evaluate the Lassen Community College facilities available to the program.*
- *Describe and evaluate additional facilities utilized off-campus by the program*
- *Describe any facilities needs identified internal or external analysis*
- *Justify any proposed modifications or additions to existing facilities that would better serve the program planned for the program review cycle.*

**Discussion:** Our new office and classroom facility located the N building are adequate for our present condition.

- The classroom is cooled by a single wall-mounted air conditioner that is inadequately sized for the large classroom and is too loud to operate during class time. Consequently, the AC must be shut off during class time, and it is too small to be effective during breaks. Having an outside unit similar to what is installed in the M building (AJ) would be beneficial to student comfort and learning.
- There are times when either AJ or The Fire program has 2 simultaneous classes occurring and we are able to utilize classroom space from each others buildings. A fourth classroom is needed to accommodate expansion of our programs.

- Water supply for on-campus engine operations, when flowing large amounts of water, has been a problem due to the fragility of the campus water system. Two hydrants could be identified by the Fire Program Director, and those hydrants could have pressure relief valves installed. The program would then only use the protected hydrants for any on-campus engine operations. More work needs to be done on making this work.
- The Lassen County Training Center, located by the Susanville Airport, is used by the college for its Cal Fire Academy, Firefighter Survival, RIC Operations and the Volunteer Fire Academy. We have found this facility to be lacking in several ways including on-sight bathroom facilities and some training props and it no longer meet our needs. Therefore, we have moved the majority to our training to campus and have been training in the large graveled area behind the Equipment Cache. With a few additions and minor improvements this area is adequate to meet our needs for the foreseeable future.
- It has been a goal for our program and the Advisory committee to become a State Fire Training Accredited Fire Academy. To meet this goal we must have 3 story Fire training tower. The Director has received Quotes for this type of facility and will be seeking funding opportunities to make this a reality. This would be a regional resource with local fire agencies able to utilize the facility and should attract other agencies from outside the area. (See Appendix F)
- Our Fire engines are being stored outside, and weather is slowly destroying them. We make every effort to protect them from the elements, but inevitably, multiple problems arise when we activate the engines for classes. The program will be seeking some way to find indoor storage for our valuable assets, possibly hanger space at the Susanville Airport or making space at the Cogen plant if the roll up doors can be repaired. The cost is unknown.
- The Cogen plant has long been looked at for its many opportunities as a fire training site. The program would like to explore those possibilities for planning purposes and get approval from administration to move forward with this. This could be an alternative to a 3 story training facility with infrastructure already in place.

## Equipment

*Describe and evaluate equipment and equipment support provided for instruction and instructional support*

**Discussion:** The Fire program does have some needs for additional equipment to support our classes;

- **Fire Engines:** Having well-maintained fire engines is imperative for the program. Both of our fire engines are suffering from years of neglect and deferred maintenance. As the elements take their toll, it seems that when one issue is fixed, other problems arise. The Director is currently seeking avenues to obtain two additional engines that are newer and simpler to maintain. These engines would come to us fully operational, providing us with a solid baseline for maintenance rather than having to catch up on years of neglect with our current engines. Finding indoor space would be beneficial for preserving these engines for years of service to the college. We will be exploring options to erect tent structures that can keep our apparatus sheltered from the elements. As of the last IPR, the program's budget has included an additional line item of \$10,000, which should be

adequate to repair and maintain our existing fleet. An alternative would be to absorb the fire fleet into the LCC fleet for funding repairs and maintenance.

- **Classes Relying on Apparatus:** Numerous classes rely on our well-maintained apparatus, including FS-72A & B, FS-61 Basic 32, FS-8 FF Skills, FS-60 Cal Fire Academy, and FS-8.21 Volunteer Academy. Our engines also support FS-80 Firefighter Survival and FS-50 RIC Operations.
- **Equipment Maintenance:** Maintenance of all of our equipment is a top priority. In order to ensure the safety of our students, the following are mandated: Annual ladder testing costs \$1,000, and SCBA and mask annual testing costs \$1,500. There have been some price increases from our testing vendors, along with needed repairs on our SCBAs, which will lead to an increase in this budget to \$4500.
- **Wildland Tools:** Our wildland tools are outdated and are slowly being placed out of service due to broken handles and excessive wear from sharpening over the last 15 years. We will need to update our wildland tools at a cost of approximately \$2,000, which will provide us with about 20 new tools.
- **Consumables:** Throughout the academic year, the program uses consumables such as lumber, plywood for academy classes, and propane for Fire Control 4 classes. The cost of these consumables is borne by the program and can reach up to \$2,000 per semester. This typically comes from our supplies budget line but rapidly depletes that budget. This depletion then limits our ability to purchase parts and additional supplies to support the program and classes in other ways, resulting in some maintenance being deferred and negatively affecting the quality of our program. Given the increase in lumber prices and supplies, the supplies budget should be increased to \$10,000 to compensate for the purchase of these consumables and other class materials.
- **Training Grounds:** The large graveled area located next to the Fire Equipment Cache building is sufficiently sized to serve as training grounds for our academies. However, there are many weeks when we train in the dark and rely on flashlights and plug-in floodlights for safety and visibility. To enhance visibility and safety for our students, the program would like to have the area lit with stadium-type floodlights, though we do not have cost estimates at this time.

## Technology

- *Describe and evaluate technology and technology support provided for instruction and instructional support.*
- *Justify any proposed modifications or additions to existing technology that would better serve the program planned for the next four years.*

## Discussion:

- The program has over a million dollars' worth of fire equipment located in the equipment cache. Currently, tracking and inventory control is done using basic forms. The program would like to research and purchase an inventory control system to keep track of our equipment. It is the Director's understanding that there may be an inventory program being implemented campus-wide, which could allow us to integrate with that system.
- Hazardous materials classes are increasingly becoming part of our programming. To support Haz Mat classes and confined space training, we will need two 4-gas air

monitors, along with supporting calibration equipment. The estimated cost for this is approximately \$4,000.

- We are evaluating the possibility of broadcasting live lectures and classes to students. This live lecture format may enhance our online program and expand our influence and learning objectives for online students. To this end, the program will need to purchase an OWL system to reach students outside the area. The estimated cost for this system and its installation is around \$2,000.

## Section 4: Program Planning

*Progress update on previous action plans*

Action Plan	Progress Detail	Outcomes
Offer classes for students to complete The SFT Company Officer Classes within 2 semesters	Scheduled and hosted classes for last 2 years	Initially very successful but enrollment has declined once local need has been met
Offer classes that meet Cal Fire JAC class needs	All Cal fire JAC classes are offered on campus for last 2 years	Enrollment has grown and remains steady
Offer Driver Operator classes	Driver Operator 1A and 1B Offered last 2 years(FS-65A and B)	Enrollment has grown and remains in upward trajectory. With more opportunities being explored
Obtain agreement with a NWCG member agency to enable LCC to sign NWCG certifications following qualifying classes taught at LCC	Signed agreement with local BLM district in Spring 2022	LCC NWCG certificates are recognized for legitimacy and students are able to be employed in federal agencies
Hire an ISS to maintain fire equipment	Fall 2022 hired an ISS and shared position with AJ	Keeping personnel in this position remains a challenge

## Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis

*Complete SWOT analysis*

<b>Strengths</b>	<ul style="list-style-type: none"> <li>- Programming and logistics in place to grow program</li> <li>- high rate of entry level student employment from program</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>-Part-time Instructor recruitment,</li> <li>- Housing for out of area students,</li> <li>-High Cost of tuition for Out-Of-State students</li> <li>- High maintenance cost for College Fire apparatus</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>- Additional FS-65A classes to support Cal Fire and other agencies</li> <li>- modernize equipment to increase relevancy to industry</li> <li>- strengthen partnership with SIR fuels crew,</li> </ul>

	<ul style="list-style-type: none"> <li>- completed Forestry degree and offered classes in Fall, 2024,</li> <li>- Extend good neighbor policy to reduce tuition for out of state students in academies.</li> <li>- Develop online and hybrid modalities to attract students from outside the area.</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>- Competing with much larger programs statewide for the same students</li> </ul>

## Program Plan

*Develop a program action plan based on the findings of the SWOT Analysis. The plan should specify should aligns with one or more College Goals. SLO maps may be utilized to help show the connection.*

- *How do the action plans align with the mission of the college?*
- *What strategic goals do the action plans support?*
- *What ISLOs do the action plans support?*
- *What specific evidence (e.g., SLOs, data) support the action plans?*
- *Based on the action plans what resources are needed?*
- *What are the expected outcomes of the action plans?*
- *What is the total cost of bringing the action plan to life?*

**SWOT Analysis:** The program has developed training to meet the needs of various agencies and firefighters. We have concentrated on three categories: entry-level training, continuing education, and career development. We have purchased and maintained our equipment to ensure that students train on safe and up-to-date apparatus. This has been accomplished with a dedicated full staff of part-time instructors, who are employed elsewhere. It is only through their commitment that we can provide the program we currently offer. However, several part-time instructors have taken jobs outside the area or have accepted promotions which limit their availability as instructors. Additionally, it is increasingly difficult to recruit local part-time instructors, as there are very few qualified individuals in the area. To maintain our course offerings and to support any planned expansion, recruitment of instructors remains a high priority.

The Director has fielded many inquiries from out-of-state students. Housing is often a significant issue, as is the cost of out-of-state tuition. There are a couple of options that could provide potential solutions to our housing problems. First, it would be beneficial for the program to revisit the WUE program to reduce costs for out-of-state students from the Reno/Tahoe area who are part of the academies. Furthermore, we may be able to establish a collaboration between our work experience program and local volunteer fire departments. We propose assigning 3-4 students to each fire station. This arrangement would be carried out in conjunction with the work experience program to address liability concerns. Additionally, students would be required to volunteer with the respective agency and participate in training and responses as part of their volunteer duties, thus offering potential lodging as well as work experience.

The Driver Operator series FS-65A and B are highly sought after by agencies statewide. These classes fall under our career development category and are required by most

agencies for firefighters to be promoted to apparatus operators. These classes are not readily available and can be expensive when found. LCC is in a unique position to offer these classes due to our on-campus fire engine fleet. If we did not have these apparatus, students would need to bring their agency's apparatus, which would not be feasible for out-of-area students. It is imperative to maintain an operational fleet of engines for the continued success of these classes. Additionally, LCC would like to develop a partnership with the Susanville Indian Rancheria to provide ongoing training to their new fuels crew. The director has developed a Forestry Management degree to meet the employment demands of fuels crews for the USFS and Cal Fire. The first cohort of students pursuing this degree began classes in Fall 2024.

It is important to recognize that the program is competing with similar fire programs across the state of California. Currently, it is not feasible for LCC Fire Technology to provide the same elements as those larger programs. Instead, we are focusing on opportunities to meet the needs of our community and local agencies, primarily by offering direct employment to our students after completing their training at LCC. Niche markets do exist for us, and we will need to identify and explore these opportunities further.

Action Plan	Supporting Evidence	Expected Outcome	Resource(s) to Achieve the Action Plan	Resource Category	Estimated Cost	Expense Type	Priority Ranking
<b>Obtain 2 additional fire apparatus</b>	Our present fleet is costing more than they are worth with maintenance Supports growing enrollment of FS-65A and B And used in Cal Fire Academy and Volunteer academy	Reduced maintenance cost, updated equipment for training and increased enrollment	2 pumping fire Apparatus supports 2 classes and multiple sections of each	equipment	Possible donations \$10000 or \$5000/engine <b>Or purchase 1 used engine in good operating condition est cost \$25000</b>	One time	1
<b>Purchase 1 20 foot shipping container to stack on our existing containers</b>	Supports need of Cal fire Module 1A for structure fire training	Provides training to meet Cal Fire module 1A as well as other classes	Use grant funding to purchase container and use Welding Dept to modify as needed	equipment	\$5000	One time	1
<b>Purchase 4 gas air monitoring with supporting calibration equipment</b>	Haz Mat classes and confined space class have air monitoring modules that we are not able to support	Increased student satisfaction and skill development	2 4 gas air monitors with calibration equipment	equipment	\$5000	One time	2
<b>Modify the Cogen plant for engine storage and training opportunities . Possible use for Training facility</b>	Allow for indoor parking of the college engines to minimize exposure to the elements	Reduced maintenance cost for engines and provide training facility to qualify for an accredited	Coordinate with maintenance to repair roll up doors	maintenance	\$1,500,000	Possibly on going cost when assessed for training	3

		academy					
<b>Begin planning process and find funding for building 3 story fire training facility to become an accredited state fire academy</b>	The # story tower is the last piece for the fire program to become an accredited fire academy	Increased student enrollment in both the fire academy and degree track students	Coordinate with Director of maintenance to determine location and next step for planning and engineering	Facilities	1.5 million for completed project grant funded with matching funds TBD	One time and ongoing Maint. required	3

# **Section II: FORESTRY MANAGEMENT**

## **Executive Summary**

*The executive summary should be a consolidation of key findings, program plans, and participants that contributed to the review*

The Forestry Management Associate of Science (AS) degree at Lassen Community College builds upon the success of the Fire Technology Program, focusing on equipping students with strategies and skills for safeguarding and restoring ecosystems affected by disturbances such as fire, climate change, pollution, and drought. The program covers topics including Wildland Fire Prevention, Forest Health, and California Indigenous Natural Resource stewardship, thus preparing students for various careers in Forestry and Natural Resources, such as Forest and Conservation Technicians and Forest Fire Inspectors, as well as providing pathways to Bachelor's degree programs.

Back in 1935, Lassen Community College boasted a highly regarded Forestry program. During that era, the local area was home to four large lumber mills, including three located in Susanville and one in the nearby community of Westwood, CA. Additionally, the Lassen National Forest offered numerous job opportunities, creating a strong demand for vocational training in Forestry, particularly for the local community. However, as times changed and many local mills closed, the previous Forestry program was discontinued in 1984.

Since then, climate change has led to increased temperatures and prolonged droughts in California, escalating the risk of wildfires. Significant fires in the local area include the Hog Fire in July 2020, the Gold Fire in July 2020, the Loyaltan Fire in August 2020 (during which the National Weather Service issued the first-ever fire whirl warning in U.S. history), the Sheep Fire in August 2020, the Laura 2 Fire in November 2020, and the Dixie Fire, which began in July 2021 and grew to 963,309 acres, making it the largest single fire in California history. Forestry Management professionals are once again essential for implementing fire prevention strategies, managing controlled burns, and restoring ecosystems post-wildfire. With the increasing demand for natural resource management and conservation professionals, the importance of Forestry careers continues to grow, making it a vital field for the future. The concepts and practices learned in this area of study can help decrease the spread and intensity of wildfires, thereby minimizing the destruction of large ecosystems and protecting both these areas and the people who inhabit them. Based on data from the North Far North Center of Excellence and feedback from local agency providers from the Fire Technology Advisory Committee, the need for future employees trained in Forest Management is expected to increase over the next five years. It is estimated that there will be approximately 2,138 Forest Management and Protection jobs in the area by 2025.

In response to these local community needs, Lassen Community College relaunched a Forestry Management Degree and Certificate in the Fall 2024 semester. The Forestry Management program currently offers two courses: FOR 1: Intro to Forestry and FOR 5: Dendrology, with two additional classes scheduled for the Spring 2025 semester. The program has been advertised to the local community through the development of a Forestry Management webpage on the Lassen Community College website, articles posted on the North Far North website, face-to-face interactions at local high schools, and advertisements through local radio spots. These efforts generated initial interest, resulting in a beginning

cohort of students for our first two classes. We hope to expand our offerings to Forestry program students by developing partnerships with local forestry agencies such as Collins Pines and Sierra Pacific Industries, which not only provide future career opportunities in the local area but also seek to enhance student experiences through internships. Additionally, Lassen Community College is participating in state-wide webinars for the Fire Technology Program to explore further opportunities in Forestry, such as collaboration, mentorship, and continuous education.

Since the Forestry Management program began its offerings in Fall 2024, student success and retention data are not yet available as of this report's writing. As of Fall 2024, the Forestry program is staffed with two part-time faculty members and has offered two Forestry Management classes, each with nine students enrolled, marking a promising start for the program. We are currently partnering with local forestry agencies such as SPI and Collins Pines to enhance our students' experiences through internships and connections with agencies that hire foresters. We have also begun participating in the Higher Education Forestry & Natural Resources Community of Practice webinars to gain information on student opportunities in forestry throughout the state.

The Forestry Management program at Lassen Community College aims to equip students with the skills and knowledge necessary for advanced coursework, degree attainment, and entry-level employment in the field of forestry. This degree satisfies training requirements for Forestry occupations with Federal, Tribal, State, and Private Agencies.

Upon successful completion of the program, students will be able to:

1. Demonstrate knowledge of forest ecology and understand how forests respond to natural disturbances or management activities.
2. Understand the use of fire in the management of natural resources.
3. Develop quantitative and qualitative skills for data collection, analysis, and interpretation in forest ecology and management.
4. Demonstrate an understanding of forestry products and evaluate typical financial investments in forestry.
5. Analyze forest conservation, ecology, and resource management conflicts and solutions from multiple perspectives, including private landowners, industry, and public lands.
6. Effectively analyze and integrate social and natural sciences to understand diverse challenges in forest management and conservation.
7. Understand operational considerations while working under the Incident Command System during wildland fires.

#### Program Needs:

1) The Forestry Management program currently consists of the Fire Technology Program Director, two part-time Forestry Instructors, and the assistance of a biology instructor who teaches one Forestry class. As the program grows, the need for a full-time forestry instructor is becoming increasingly apparent. A dedicated full-time faculty member would be able to provide personalized mentorship and support to our Forestry Management students, including advising on academic and employment pathways. Additionally, a full-time forestry instructor would have the time to encourage

student interaction with the local community through the development of a Forestry student club and participation in local forestry-related events, such as lumberjack competitions.

2) With the rapidly evolving technologies in the field of forestry, the program would benefit from the purchase of up-to-date training equipment, including the following:

- Hoe dad (2-3)
- Rela scope (1-2)
- Basal area prism(s)
- Seedling bag (1-2)
- 100' D-tape (2-3)

Estimated cost: \$5,000.00

3) Purchase of Forestry reference books for plant identification.

4) Purchase of safety gear, including eye protection and high-visibility vests, for field studies.

5) The Forestry program would like to establish a special plot on campus to grow various forest plants, shrubs, and trees to support some of the ecology and forest management classes.

6) Print media to advertise the degree and engage directly with prospective students.

#### **Future Plans for the Forestry Management Program Include:**

- Completion of comprehensive materials advertising Forestry Management, such as a career pathway flyer and program brochure.
- Implementation of an internship program for Forestry students.
- Hiring a full-time instructor and recruiting additional part-time instructors to grow the program.

## **SECTION 1: ACADEMIC PLANNING**

### *Program Overview, Objectives, and Student Learning Outcomes*

- *Describe the program (types of degrees offered, jobs/industries/transfer pathways associated with the program, faculty members in program)*
- *Describe and evaluate the program objectives against the LCC strategic plan, specifically the mission statement and strategic goals*
- *Evaluate any changes in the program since last review. Include summary of Annual Updates completed since last review. Regular program assessment will drive program improvements.*

### **PROGRAM DESCRIPTION:**

The Forestry Management Associate of Science degree and the Certificate of Achievement will enhance opportunities for students to learn strategies and develop skills necessary to protect and restore ecosystems after disturbances caused by factors such as fire, climate change, pollution, and drought. This degree will enable students to deepen their understanding of Wildland Fire Prevention, Forest Health, Forest Ecology, Dendrology, and Climate Change, while also enriching their knowledge of Forest Management through introductory concepts of local California Indigenous Natural Resource stewardship. Concepts and practices learned from this area of study can help reduce the spread and intensity of wildfires, thereby decreasing the destruction of large ecosystems and protecting both these areas and the communities that inhabit them.

This degree meets training requirements for occupations such as Forest and Conservation Technicians, as well as Forest Fire Inspectors and Prevention Specialists, with Federal, Tribal, State, and Private Agencies. Additionally, the degree provides a pathway for transfer to Bachelor-level Forestry degree programs, allowing students to pursue careers as Foresters and Conservation Scientists. Forestry Management Advising Plans are located in Appendix I.

### **Program Student Learning Outcomes**

Upon successful completion of the Forestry Management Associate of Science degree and the Certificate of Achievement, students will be able to:

1. **Demonstrate knowledge of forest ecology and understand how forests respond to natural disturbances or management activities.**
  - **Evaluation:** Understanding forest ecology and the response of forests to disturbances is crucial. This knowledge aligns well with Lassen Community College's goal of institutional effectiveness. Effective governance and accountability in educational practices rely on the institution's capacity to impart relevant knowledge and skills. Courses focused on forest ecology can be designed to integrate theoretical knowledge with practical applications, preparing students for careers in forestry and resource management.
2. **Understand the use of fire in the management of natural resources.**
  - **Evaluation:** Curriculum that includes fire management as a natural resource management tool supports both learning opportunities and resource management goals. This aspect of forestry education can offer students insights into responsible stewardship practices. By understanding the ecological role of fire, students can contribute to sustainable management strategies that address wildfire risks while promoting ecosystem health.
3. **Develop quantitative and qualitative skills for data collection, analysis, and interpretation in forest ecology and management.**
  - **Evaluation:** Quantitative and qualitative data skills are foundational for informed decision-making in management and conservation initiatives. This aligns with Lassen's goal to provide rigorous academic programs. Training students in these areas not only enhances their employability but equips them with the analytical tools needed to evaluate forest ecosystems and make data-driven decisions.
4. **Develop an understanding of forestry products and evaluate typical financial investments in forestry.**
  - **Evaluation:** This point complements the resource management goal by preparing students to analyze the economic implications of forestry products. By understanding market dynamics and the financial aspects of forestry investments, students can make informed decisions that balance economic viability with sustainability, ensuring responsible management of both physical and financial resources.
5. **Demonstrate an understanding of forest conservation, forest ecology, and resource management conflicts and solutions from multiple perspectives—including those of private landowners, industry, and public lands.**

- **Evaluation:** This knowledge is essential in fostering student success through outreach and support. By incorporating various viewpoints, students will cultivate a holistic understanding of conflicts and solutions in resource management. This aligns with the objective of building a learning environment that encourages critical thinking and diverse engagement in forestry-related discussions.
6. **Effectively analyze and integrate social and natural sciences to understand diverse challenges to forest management and conservation.**
- **Evaluation:** The integration of social and natural sciences in forestry education directly addresses the complexity of environmental challenges, aligning with Lassen's goals for comprehensive learning opportunities. Courses can be designed to emphasize interdisciplinary approaches, enabling students to grasp the multifaceted nature of forestry issues and ultimately fostering adaptable, informed future professionals.
7. **Understand operational considerations while working under the Incident Command System during wildland fires.**
- **Evaluation:** Given the increasing frequency of wildfires, understanding the Incident Command System (ICS) is vital for forestry students. This aligns with the institution's commitment to student success by preparing them for real-world challenges. Training in ICS will enhance students' readiness to engage in emergency management effectively, thereby building both their knowledge base and employability.

Lassen Community College's strategic goals focus on creating a robust educational environment that promotes equity in learning, effective resource management, and student success. The outlined points related to forestry expertise not only align with these goals but also provide a framework for developing relevant academic programs. By integrating comprehensive forestry curricula that address ecological knowledge, resource management, and social perspectives, the College can effectively empower students to tackle contemporary challenges in forestry and conservation management, thereby fostering responsible stewardship of natural resources.

## Student Learning Outcomes

*SLO assessment is important to maintain and improve an effective learning experience for LCC students. Evaluating SLO results regularly is helpful for evaluating student learning and identifying emerging program needs. There is a link between SLO assessment results, SLO improvement plans and review of curriculum and/or budget requests. Regular program assessment will drive program improvement. These records are maintained in the online Data Management and Visualization tool (TABLEAU) and are available for review by faculty at any time through its self-updating, interactive dashboards, and reports. Feedback and narrative from the Share Point tool will be included in the reports.*

### Student Learning Outcomes

Course Assessed	Recommendations for Improvement
FOR 1 Intro to Forestry	Class Offered in Fall 2024 SLO results not available at the time of this report
FOR 2 Forest Ecology	Scheduled for Spring 2025 SLO results not available at the time of this report
FOR 3 Forest Measurements	SLO results not available at the time of this report

FOR 4 Forest Health and Protection	SLO results not available at the time of this report
FOR 5 Dendrology	Class Offered in Fall 2024 SLO results not available at the time of this report
FOR 6 Intro to Forest Operations	SLO results not available at the time of this report
FOR 7 Intro to Wildland Fire	SLO results not available at the time of this report

Forestry classes began to be offered in Fall 2024; therefore, data on Forestry SLO outcomes is not available as of the date of this report.

Program Student Learning Outcomes	Summarize Findings
<p><b><u>Forest Management Associate of Science Degree</u></b>            PSLO 1: Demonstrate knowledge of forest ecology and understand how forests respond to natural disturbances or management activities.            PSLO 2: Understand the use of fire in management of natural resources.            PSLO3: Develop quantitative and qualitative skills for data collection, analysis and interpretation for forest ecology and management.            PSLO 4. Develop an understanding of forestry products and be able to evaluate typical financial investments in forestry.            PLSO 5. Demonstrate an understanding of forest conservation, forest ecology, and resource management conflicts and solutions from multiple perspectives ranging from private landowners to industry and public lands.            PSLO 6. Effectively analyze and integrate the social and natural sciences to understand diverse challenges to forest management and conservation            PSLO 7. Understand operational considerations while working under the Incident Command system during wildland fires.</p>	No change in PSLOs
<p><b><u>Forest Management Certificate of Achievement</u></b>            PSLO 1: Demonstrate knowledge of forest ecology and understand how forests respond to natural disturbances or management activities.            PSLO 2: Understand the use of fire in management of natural resources.            PSLO3: Develop quantitative and qualitative skills for data collection, analysis and interpretation for forest ecology and management.            PSLO 4. Develop an understanding of forestry products and be able to evaluate typical financial investments in forestry.            PLSO 5. Demonstrate an understanding of forest conservation, forest ecology, and resource management conflicts and solutions from multiple perspectives ranging from private landowners to industry and public lands.            PSLO 6. Effectively analyze and integrate the social and natural sciences to understand diverse challenges to forest management and conservation            PSLO 7. Understand operational considerations while working under the Incident Command system during wildland fires.</p>	No change in PSLOs
<b>Recommendations for Improvement</b>	
<p><b>Discussion:</b> Significant time has been spent reviewing and updating our course outlines to ensure that the Student Learning Outcomes (SLOs) align with the essential skills needed for real-world Forestry Management. All course outlines fulfill the program requirements and align with the goals and objectives of Lassen Community College. SLO outcome data for forestry classes is not available for this report.</p>	

## Curriculum

### Courses

Summarize curriculum revisions, new course adoptions, and/or course deletions since the last program review. Describe the program accomplishments and/or changes (e.g., major revisions, additions, etc.). All courses need to be submitted to the Curriculum Committee for revision at least once every five years.

Following the Curriculum/Academic Standards Committee action on all submitted Revision to Existing Course Forms, a summary Instructional Program Curriculum Review Form will be completed by the Curriculum/Academic Standards Subcommittee Chair and given to the program faculty for inclusion in the program review. The signed Instructional Program Curriculum Review Form is to be included with your completed program review documents for all certificates and degrees.

Course Assessed	Last Offered	Term of Last Revision
FOR 1 Intro to Forestry	Fall 2024	10/1/24
FOR 2 Forest Ecology	Spring 2025 Scheduled	10/1/24
FOR 3 Forest Measurements		10/1/24
FOR 4 Forest Health and Protection		10/1/24
FOR 5 Dendrology	Fall 2024	10/1/24
FOR 6 Intro to Forest Operations		10/1/24
FOR 7 Intro to Wildland Fire		10/1/24
<b>Degrees &amp; Certificates</b>		
AS Forestry Management		10/1/24
CA Forestry Management		10/1/24

A signed Instructional Program Curriculum Review is provided in (Appendix C).

Degree or Certificate Title	Award Type (AA, AS, AAT, AST, etc.)	Units	Term of Last Revision
Associate in Science Degree in Forest Management	Associate in Science	60	Fall 2024
Certificate of Achievement in Forest Management	Certificate of Achievement	29.5	Fall 2024

**Discussion:** Some changes have been made to the Forestry Advising Plan. AERO 50 was added to the program replacing the requirement of the FS 7 class. FS 7 will be offered in the future as an elective course to the degree.

### Articulation/Integration of Curriculum

- Attach a tabular comparison of Lassen Community College courses articulating with UC and CSU, indicating courses with approved C-ID designations as applicable (Obtain copies of Articulation Agreements from the Transfer Center / Articulation Officer)
- Provide a narrative reviewing the Lassen Community College courses and courses at four-year institutions for course alignment. (e.g., two courses at Lassen needed to articulate with one course at UC) and the unit requirements for Lassen Community College courses as compared to four-year institutions

**Discussion:** Although the field of Forestry does not have CI-D numbers listed in the California

Community College Chancellors system, the Lassen Community College Forestry classes were designed to align with Cal Poly Humboldt's Forestry and natural resource offerings thus providing a pathway to transfer.

### **External Analysis: Job Market Assessment**

*Provide a summary of Industry Advisory Board suggestions and market data. The market data will be populated for Career Technical Education programs only*

Our Lassen Community College Fire Technology and Forestry Advisory Board (Appendix E) has expressed the need for Forestry Technicians who work in the areas of ecosystem health, including fire prevention and the restoration of ecosystems following wildfires. Positions are available at both the federal and state levels in agencies such as the U.S. Forest Service (USFS), Bureau of Land Management (BLM), State of California (SIR), and CAL FIRE, as well as with local agencies like Collins Pines and Sierra Pacific Industries (SPI).

The Program Endorsement Brief from the Centers of Excellence for Labor Market Research, dated February 2022, found the following for the Far North region:

- The Far North subregion held 2,107 forest management and protection jobs in 2020. Jobs in this sector are projected to increase by 1% over the next five years, adding 31 new jobs by 2025.
- Over the next five years, forest management and protection jobs are expected to have 261 annual openings in the Far North subregion.
- Wage data indicates that forest management and protection occupations earn \$2 to \$30 above the subregion's living wage of \$12.74 per hour.
- An analysis of awards data shows that Far North training providers conferred an average of 6 awards (certificates and associate degrees) in forest management and protection programs over the last three academic years. One training provider conferred an average of 40 awards (Bachelor's degrees) in these programs during the same period.

Full report at: <https://regionalcte.org/lmi/312-20231120120752531705.pdf>

As for the Fire classes associated with the Forestry degree. They all meet the National Wildfire Coordinating group standards for issuing certificates. The NWCG standards for course delivery, PMS 901-1, state:

"Non-member agencies or entities (e.g., educational institutions, contractor associations) may deliver NWCG training courses when the standards established in this publication are met. Non-member agencies or entities are encouraged to establish formal agreements with local or geographic area member agencies when delivering NWCG training. Such cooperative efforts are beneficial to the cooperators and to all students. For course completion certification, see Issuing the NWCG Training Course Completion Certificate."

<https://www.nwcg.gov/publications/pms901-1/nwcg-standards-for-course-delivery-pms-901-1> accessed on 2-19-2024.

In the "Issuing the NWCG Training Course Completion Certificate" section it states:

..." Educational institutions, contractor associations, and non-member agencies may issue

successful students the NWCG Training Course Completion Certificate, PMS 921-1 for NWCG courses if one of the following conditions is met:

- The Lead Instructor is an authorized representative of an NWCG member agency
- The entity sponsoring the NWCG course has a formal agreement established with an NWCG member agency.” ... <https://www.nwcg.gov/publications/pms901-1/nwcg-standards-for-course-delivery-pms-901-1> accessed on 2-19-2024.

To this end, LCC Fire Technology Program established a Memorandum of Understanding (MOU) with NWCG member agency, United States Department of Interior (USDI), Bureau of Land Management, Northern California District (BLM). Which runs from February 3, 2022 and it effective until one or both parties elect to terminate. This agreement is current and is expected to continue.

### **Program Planning and Communication Strategies**

*Describe the communication methods and interaction strategies used by your program faculty and administrators to discuss program-level planning, curriculum, SLOs, PSLOs, equity, student achievement, and institutional performance data.*

**Discussion:** The program conducts advisory committee meetings on a regular basis. These meetings often serve as the starting point for our programming strategy, as many committee members are actively working in both the fire and forestry sectors. Furthermore, the Fire Technology Director recently organized a meeting with the forestry faculty to address the program's needs and ensure that all faculty members clearly understand how to fulfill their administrative responsibilities.

### **Academic Planning Analysis Summary**

Summarize the key findings from the program analysis and outline opportunities for change:

- The Fire Technology Program has consistently maintained the agreements and contracts needed to meet federal and state fire training standards. This coordination can help strengthen collaboration with forestry partners going forward.
- Initial interest and participation in the Forestry Management degree is promising. Student success and retention data should be available by the next IPR.
- Some of the largest employers in the local area, including Sierra Pacific Industries, Collins Pines, and the USFS, have expressed interest in our Forest Management students. Some of these agencies have already visited the classroom and provided information on their hiring practices.

## Human Resources Planning:

### Workload and Staffing Assessment

Year	F/T Faculty	P/T Faculty
Previous Year	N/A	N/A
Current Year	0	Ed Merrill Richard Noggles
Next 2 Years	1	2

#### Discussion:

Although the Forestry Management program is off to a great start, the addition of a full-time faculty member in Forestry is essential for addressing growing educational demands, advancing research initiatives, engaging with local communities, and developing a skilled workforce. This investment not only elevates the quality of education provided but also reinforces the institution's commitment to tackling critical environmental challenges. Overall, the presence of a dedicated expert would create a more robust and impactful forestry program that benefits students, communities, and the environment alike.

#### Professional Development

*Provide a description and associated outcomes related to the program's target professional development participation over since the last program review. Discuss the current professional development/training need(s) of your program, and why this need(s) exists. If you have specific trainings you want to request, please include those details.*

**Discussion:** Professional development is an essential aspect of being a competent and effective forestry professional. As the challenges in forestry become more complex—such as climate change, invasive species, and habitat loss—forestry professionals must continuously enhance their skills. This may involve learning new techniques for data collection, forest monitoring, ecosystem restoration, or employing advanced technologies like remote sensing. Additionally, the program is at the stage where connecting with other forestry professionals, researchers, and stakeholders can lead to collaborative projects, mentorship opportunities, and a sharing of knowledge and resources, which can significantly enhance the Lassen Community College Forestry Management program. Attendance at forestry conferences is also crucial.

## Infrastructure Planning:

### Facilities

- Describe and evaluate the Lassen Community College facilities available to the program.
- Describe and evaluate additional facilities utilized off-campus by the program
- Describe any facilities needs identified internal or external analysis
- Justify any proposed modifications or additions to existing facilities that would better serve the program planned for the program review cycle.

**Discussion:** The Fire Technology office and classroom facility located in the N building are adequate for our current needs. The Forestry program would like to establish a special plot on campus to grow various forest plants, shrubs, and trees to support some of the ecology and forest management classes.

## Equipment

*Describe and evaluate equipment and equipment support provided for instruction and instructional support*

**Discussion:** The Forestry Management program does have some needs for additional equipment to support our classes. With the rapidly evolving technologies in the field of forestry, the program would benefit from the purchase of up-to-date training equipment, including the following equipment identified as utilized in local agencies training:

- Hoe dad (2-3)
- Rela scope (1-2)
- Basal area prism(s)
- Seedling bag (1-2)
- 100' D-tape (2-3)

Estimated cost: \$5,000.00

### Purchase Safety Equipment:

First Aid Kits \$165.95

Personal Protective Equipment: safety vests (\$319 for 20), eye protection (\$59.00 for 20@ \$2.95), hearing protection (200 pairs disposable ear plugs \$44.75).

**Purchase Drone Technology:** 3 professional Drones with cameras for demonstrating aerial surveying and monitoring of forest health \$1,500 to \$3,000

## Technology

- *Describe and evaluate technology and technology support provided for instruction and instructional support.*
- *Justify any proposed modifications or additions to existing technology that would better serve the program planned for the next four years.*

### Discussion:

**Program Planning:** As the program, increases in enrollment, our classroom and technology needs may change.

Action Plan	Progress Detail	Outcomes
Identify on campus area to plant a forest nursery to support ecology and plant ID classes	Work with facilities director to identify location of nursery	N/A
Develop Internship program for Forestry students	Initial contact has been made with forestry agencies such as SPI the USFS, BLM and Collins Pines	
Purchase safety equipment for Forestry field trips	Purchase safety vests and eye protection	
Develop Program brochure and Career flyer for recruitment	Initial program flyer has been developed. Program logo is in process	
Purchase Forestry reference	Purchased : Plants of Northern	

material	California: A Field Guide to Plants West of the Sierra Nevada for Dendrology class	

## Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis

*Complete SWOT analysis*

<b>Strengths</b>	<ul style="list-style-type: none"> <li>-Lassen County of rich in natural resources. There are many diverse ecosystems that can provide students with hands-on learning opportunities through field trips</li> <li>- Knowledgeable Part-time faculty who are practicing industry professionals enhance learning experiences.</li> <li>-Strong support from local forestry and natural resource agencies.</li> <li>-large wildfire in the local areas increased the demand for forestry professionals.</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>- Instructor recruitment,</li> <li>- Rural Area housing needed for out of area students,</li> <li>- New program with limited financial resources competing with other programs who received grant funds.</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>- Increasing job openings in Forestry, Conservation, and Environmental Management due to growing environmental awareness and climate initiatives.</li> <li>- Partnerships with SPI and Collins Pines to extend student learning through internships.</li> <li>- modernize equipment to increase relevancy to industry</li> <li>- strengthen partnership with SIR fuels crew</li> <li>- Possible opportunities for community outreach and service learning projects through development of a Forestry Club should a full-time instructor be hired.</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>- Competing with much larger programs statewide for the same students</li> </ul>

## Program Plan

*Develop a program action plan based on the findings of the SWOT Analysis. The plan should specify should aligns with one or more College Goals. SLO maps may be utilized to help show the connection.*

**SWOT Analysis:** While a forestry degree program in Lassen County has several strengths, notably its integration with the natural environment and experienced faculty, it faces challenges such as funding limitations and competition. Nevertheless, there are significant opportunities for growth and expansion through partnerships and curriculum diversification. Addressing the threats posed by economic and environmental changes will be crucial to the program's future success.

Action Plan	Supporting Evidence	Expected Outcome	Resource(s) to Achieve the Action Plan	Resource Category	Estimated Cost	Expense Type	Priority Ranking
<b>Full time Instructor</b>	Provide for consistent student activities programming and enhance class scheduling	Increase class scheduling and student success	Hire full time fire instructor	Personnel	\$150000 includes benefits	One time	2
<b>Measurement Tools:</b> Forestry Suppliers English Steel Diameter Tape Model 343D Diameter Tape: To measure tree diameters. \$39.95 Pacing Tools: Such as range finders Nikon® ProStaff® 1000i Laser Rangefinder \$150.00 for distance and area measurement.	Allow students to take accurate measurements in Forestry Classes and to practice with equipment that they will utilize in the work world	Enhance student learning	Purchase equipment	Equipment	\$5000.		1
<b>Safety Equipment:</b> First Aid Kit Personal Protective Equipment: safety vests, eye protection, hearing protection	Keep students safe on Forestry field trips	Necessary for safe fieldwork	Purchase Equipment				1
<b>Drone Technology</b>	3 professional Drones with cameras for demonstrating aerial surveying and monitoring of forest health	Increase student learning	Purchase Equipment	Equipment	\$1,500 to \$3,000	One Time	1

<b>Program Advertisement Materials</b>	Increase community awareness of Forestry Program	Student recruitment	Develop program brochure and pamphlets on local species, ecosystems & conservation practices for community members				1
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# **Section III: AERONAUTICS/AVIATION**

## **Executive Summary**

*The executive summary should be a consolidation of key findings, program plans, and participants that contributed to the review*

### **SECTION 1: ACADEMIC PLANNING**

*Program Overview, Objectives, and Student Learning Outcomes*

- *Describe the program (types of degrees offered, jobs/industries/transfer pathways associated with the program, faculty members in program)*
- *Describe and evaluate the program objectives against the LCC strategic plan, specifically the mission statement and strategic goals*
- *Evaluate any changes in the program since last review. Include summary of Annual Updates completed since last review. Regular program assessment will drive program improvements.*

Aeronautics is a stand-alone program that includes two classes. The first is Aero-1A Aviation Ground School. This course is specifically designed to provide comprehensive explanations of aeronautical concepts and to prepare students for the Federal Aviation Administration (FAA) written examinations related to Visual Flight Rules (VFR) and the Private Pilot License. Data on this class show consistent enrollment, but there are declining success and retention rates. This decline in the AERO-1A success rate presents an urgent need for analysis and improvement strategies. Ultimately, it is up to the instructor to devise strategies to improve success and retention rates for this class.

In the Student Learning Outcome (SLO) recommendations, the instructor states: “After poor performance by the class as a whole on the last two assessments, I asked the class who was spending at least as much time away from class as they are in class with the course material. I did not have any students who were spending equal time away from class studying the material. As I recall, it is a standard expectation for students to spend two hours on their own for each hour of instruction.” Here, the instructor has identified the need for additional study hours for the students in the class in order to improve success.

We suggest two strategies to address the declining success and retention rates: utilizing an early intervention system for struggling students and working closely with the LCC tutoring center to develop enhanced academic support for the students taking the Aero-1A class, preferably involving a student who has been successful in the course. The instructor also noted that among the students who were successful in the class, three earned their pilot licenses, and others are actively taking flight lessons. This suggests that students who succeed in the course go on to be successful in their pursuit of flying.

The second course is AERO-50 UAV/UAS Ground School. This is a new class that will be tied to the Forestry Management degree. This class has not yet been taught, and therefore does not have any data for analysis. We are currently seeking an Instructor for this course as the original instructor has become unavailable.

## Student Achievement and Learning Outcomes

### Trends and Patterns in Student Achievement

#### Course Success Rates

Course Success Rate	2020-21	2021-22	2022-23	2023-24
<b>Program-Level</b>				
Aviation Overall Success Rate		71%	67%	54%
Lassen College Success Rate	77%	78%	78%	80%
<b>Course-Level</b>				
AERO-1A: Aviation Ground School		71%	67%	54%
AERO-50: UAS Ground School				
<b>Modality</b>				
Main Campus		71%	67%	54%

Course Success Rate	2020-21	2021-22	2022-23	2023-24
<b>Program-Level</b>				
Aviation Overall Success Rate		71%	67%	54%
Lassen College Success Rate	77%	78%	78%	80%
<b>Gender</b>				
Female		100%	100%	0%
Male		67%	63%	58%
Unreported				
<b>Ethnicity</b>				
American Indian or AK Native				0%
Asian				
Black or African American				
Hispanic or Latinx			67%	100%
Pacific Islander or HI Native				
Two or More Races				
Unreported				
White		71%	67%	60%

**Discussion:** There has been a decline in the overall success rate over the past three years, dropping from 71% to 54%. This represents a significant decrease of 17 percentage points, indicating that the program may face challenges in ensuring student success. This decline is specific to the AERO-1A class. Instructor notes indicate that the class is being taught according to agency standards.

Course Retention Rate	2020-21	2021-22	2022-23	2023-24
<b>Program-Level</b>				
Aviation Overall Retention Rate		100%	78%	92%
Lassen College Retention Rate	88%	89%	90%	91%
<b>Course-Level</b>				
AERO-1A: Aviation Ground School		100%	78%	92%
AERO 50- UAS Ground School				
<b>Modality</b>				
Main Campus		100%	78%	92%

Course Retention Rate	2020-21	2021-22	2022-23	2023-24
<b>Program-Level</b>				
Aviation Overall Retention Rate		100%	78%	92%
Lassen College Retention Rate	88%	89%	90%	91%
<b>Gender</b>				
Female		100%	100%	100%
Male		100%	75%	92%
Unreported				
<b>Ethnicity</b>				
American Indian or AK Native				100%
Asian				
Black or African American				
Hispanic or Latinx			67%	100%
Pacific Islander or HI Native				
Two or More Races				
Unreported				
White		100%	83%	90%

**Discussion:** The retention rate experienced a sharp decline in 2022-23, dropping to 78%, before recovering to 92% in 2023-24. This fluctuation suggests that possible external factors may have impacted student engagement or course completion during 2022-23. This rate reflects the AERO-1A class only. The significant drop in retention rates in 2022-23 warrants further investigation into student support services and any challenges that may have arisen during that academic year.

## Student Learning Outcomes

*SLO assessment is important to maintain and improve an effective learning experience for LCC students. Evaluating SLO results regularly is helpful for evaluating student learning and identifying emerging program needs. There is a link between SLO assessment results, SLO improvement plans and review of curriculum and/or budget requests. Regular program assessment will*

drive program improvement. These records are maintained in the online Data Management and Visualization tool (TABLEAU) and are available for review by faculty at any time through its self-updating, interactive dashboards, and reports. Feedback and narrative from the Share Point tool will be included in the reports.

### Student Learning Outcomes

Course Assessed	Recommendations for Improvement
AERO-1A: Aviation Ground School	The Instructor did not recommend any changes to the class. As the FAA standards have not changed.
AERO 50: UAS Ground School	N/A

**Discussion:** In the SLO recommendations from Spring 2024, the instructor does not recommend any change the curriculum and mentions that the curriculum is in line with Federal Aviation Administration requirements. The instructor goes on to state: “After poor performance by the class as a whole on the last two assessments, I asked the class who was spending at least as much time away from class as they are in class with the course material. I did not have any students who were spending equal time away from class studying the material. As I recall, it is a standard expectation for students to spend two hours on their own for each hour of instruction.” Here, the instructor has identified the need for additional study hours for the students in the class in order to improve success. There are two strategies that we suggest to improve the declining success and retention rates, which include utilizing an early intervention system for struggling students and working closely with the LCC tutoring center to develop enhanced academic support for the students taking the Aero 1A class, including support from a student who has been successful in the course. The instructor went on to state that among the students who were successful in the course, three earned their pilot licenses and others are actively taking flight lessons. This suggests that students who succeed in the course go on to be successful in their pursuit of flying.

### Enrollment Management

Enrollment Management	2020-21	2021-22	2022-23	2023-24
Aviation Enrollment Overall	0	7	9	13
Lassen College Census Enrollment	12,243	11,847	11,195	11,922
Aviation Full-Time Equivalent Students (FTES)	0	0.7	0.9	1.3
Lassen College Full-Time Equivalent Students (FTES)	1,341.40	1,268.50	1,200.80	1,282.70
Aviation Number of Sections	0	1	1	1
Lassen College Number of Sections	751	812	766	772
Aviation Full-Time Equivalent Faculty (FTEF)	0	0.1	0.1	0.1
Lassen College Full-Time Equivalent Faculty (FTEF)	70.4	74.2	72.2	73.2

Aviation FTES/FTEF	0	7	9	13
Lassen College FTES/FTEF	19.1	17.1	16.6	17.5

Course Enrollment	2020-21	2021-22	2022-23	2023-24
<b>Program-Level</b>				
Aviation Overall Enrollment	0	7	9	13
Lassen College Enrollment	12,243	11,847	11,195	11,922
<b>Course-Level</b>				
AERO-1A: Aviation Ground School	0	7	9	13
AERO 50: UAS Ground School	0	0	0	0

Enrollment	2020-21	2021-22	2022-23	2023-24
<b>Program-Level</b>				
Aviation Overall Enrollment	0	7	9	13
<b>Gender</b>				
Female	0	1	1	1
Male	0	6	8	12
Unreported	0	0	0	0
<b>Ethnicity-Race-Ancestry</b>				
American Indian or AK Native	0	0	0	1
Asian	0	0	0	0
Black or African American	0	0	0	0
Hispanic or Latinx	0	0	3	1
Pacific Islander or HI Native	0	0	0	0
Two or More Races	0	0	0	0
Unreported	0	0	0	1
White	0	7	6	10

**Discussion:** The aviation enrollment has shown steady growth, increasing from 9 in the 2022-23 academic year to 13 in the 2023-24 academic year. This indicates a positive trend in student interest and recruitment efforts.

## Curriculum

### Courses

Summarize curriculum revisions, new course adoptions, and/or course deletions since the last program review. Describe the program accomplishments and/or changes (e.g., major revisions, additions, etc.). All courses need to be submitted to the Curriculum Committee for revision at least once every five years.

The signed Instructional Program Curriculum Review Form is to be included with your completed program review documents for all certificates and degrees.

Course Assessed	Last Offered	Term of Last Revision
AERO-1A: Aviation Ground School	Spring 2024	
AERO 50: UAS Ground School	N/A	

Provide a narrative of revisions made. Signed Instructional Program Form in (Appendix D)

## External Compliance

Provide a summary of any compliance regulations (e.g., accreditation, accessibility), actions taken, and gaps identified.

**Discussion:** Aero 1A conforms to Federal Aviation Administration (FAA) requirements. For more information, please refer to the relevant regulations at [eCFR Title 14](#), accessed on February 19, 2024.

## External Analysis: Job Market Assessment

Provide a summary of Industry Advisory Board suggestions and market data. The market data will be populated for Career Technical Education programs only.

- According to the Bureau of Transportation Statistics, The US airline industry (passenger and cargo combined) is projected to need 674,000 new pilots over the next 20 years.
- The US Bureau of Labor Statistics projects that employment for aircraft and avionics equipment mechanics and technicians will grow by 5% from 2023 to 2033.
- About 18,500 openings for airline and commercial pilots are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

## Program Planning and Communication Strategies

Describe the communication methods and interaction strategies used by your program faculty and administrators to discuss program-level planning, curriculum, SLOs, PSLOs, equity, student achievement, and institutional performance data.

Aeronautics consist on one class AERO 1A at this time.

## Academic Planning Analysis Summary

Summarize the key findings from the program analysis and outline opportunities for change

The data on this class show a consistent class enrollment, but shows declining success and retention rates. The declining AERO-1A success rate presents an urgent need for analysis and improvement strategies. Ultimately, it is up to the instructor to devise strategies to improve success and retention rates for this class. There are two strategies that we suggest to improve the declining success and retention rates which include utilizing an early intervention system for struggling students and working closely with the LCC tutoring center to develop an

enhanced academic support for the students taking the Aero 1A class utilizing a student who has been successful in the course.

## **Human Resources Planning:**

The program success is reliant on part time instructors. With no plans for program growth, this should be sustainable

**Infrastructure Planning:** As of now Class room space and IT are adequate for present courses.

**Program Planning:** With the addition of AERO 50: The program will need to purchase at least 4 training drones with cameras. This should be adequate for introduction to career and technical use of drones. Est costs: \$5000

# **Appendix A: Professional and Volunteer Firefighter Courses**

- **Fire Instructors**
  - FS 64 Instructor 1 Instructional Methodology Instructor 1.0 Unit (State Fire Training)
  - FS 64B Instructor II-Instructional Development 2.0 Units (State Fire Training)
- **Company Officer Courses** Designed for students who have been working as Firefighter/Engineers (paid or volunteer) and intend on becoming Engine Captains/Company Officers.
  - FS 92A Company Officer 2A-Human Resource Management for Company Officers (NFPA Fire Officer Level 1 and II) 2.0 Units (State Fire Training)
  - FS 92B Company Officer 2B -General Administrative Functions for Company Officers (NFPA Fire Officer Level 1 and II) 1.0 Unit (State Fire Training)
  - FS 92C Company Officer 2C: Fire Inspections and Investigation for Company Officers (NFPA Fire Officer Level 1 and II) 2.0 Units (State Fire Training)
  - FS 92D Company Officer 2D: All-Risk Command Operations (NFPA Fire Officer Levels I and II) 2.0 Units (State Fire Training)
  - FS 92E Company Officer 2E-Wildland Incident Operations for Company Officers (NFPA Fire Officer Level 1 and II) 2.0 Units (State Fire Training)
- **Driver Operator Series**
  - FS 65A Driver/Operator 1A: Emergency Vehicle Operations 1.5 Units (State Fire Training)
  - FS 65B Driver/Operator 1B: Pump Operations 1.5 Units (State Fire Training)
  - FS 65C Wildland Fire Apparatus Operations 0.5 Unit (State Fire Training)
- **Volunteer Firefighter Courses:**
  - FS 65A Driver/Operator 1A: Emergency Vehicle Operations 1.5 Units (State Fire Training)
  - FS 59 Confined Space Awareness 0.5 Unit (State Fire Training)
  - FS 97 Fire Control 4: Controlling Ignitable Liquids and Gases 0.5 Unit (State Fire Training)
  - All Professional Development plus:
    - FS 98.21 Volunteer Firefighter Academy 2.5 Units
    - FS 156 Pump Operations 0.0 Unit
- Heavy Equipment Operators Courses:** FS 98.20 Incident Safety Awareness for Hired Vendors 0.5 Unit (State Fire Training)

**Appendix B:  
Signed Curriculum Review Form  
Fire Technology**

Lassen Community College  
Status of Curriculum Reviews

**Fire Technology Instructional Program Review:**

**Status of Curriculum Review 11/29/2022**

<b>Course Name</b>	<b>Curriculum Committee Review Completed</b>	<b>Curriculum Committee Review <u>Not</u> Completed</b>	<b>Course SLO mapping reviewed</b>
EMT 21 Emergency Medical Responder	11/29/2022		01/19/2021
FS 3 Fundamentals of Fire Prevention	09/20/2022		03/02/2021
FS 4 Fire Protection Equipment and Systems	09/20/2022		03/02/2021
FS 5 Fire Organization and Management	09/20/2022		12/01/2020
FS 6 Building Construction for Fire Protection	09/20/2022		03/02/2021
FS 8 Wildland fire Suppression	10/04/2022		12/01/2020
FS 13 Fire Behavior and Combustion	09/20/2022		03/02/2021
FS 14 Principles of Fire Safety and Survival	09/20/2022		03/02/2021
FS 20 First Aid-CPR or Public Safety	10/04/2022		12/01/2020
FS 23 Firing Operations S-219	10/04/2022		03/02/2021
FS 26 Basic Air Operations (S-270).	10/04/2022		05/18/2021
FS 49 FS Work Experience	11/15/2022		11/15/2022
FS 50 Rapid Intervention Crew (RIC) Operations	10/04/2022		05/18/2021
FS 51 Introduction to Fire Tech Care	10/04/2022		12/01/2020
FS 56 Helicopter Crew Member	10/04/2022		02/16/2021
FS 57 Vehicle Extrication	10/04/2022		05/18/2021
FS 59 Confined Space Awareness	10/04/2022		05/25/2021
FS 60 Cal Fire Firefighter Academy	08/16/2022		05/18/2021
FS 60A Basic Fire Crew Firefighter	10/04/2022		05/25/2021

Lassen Community College  
Status of Curriculum Reviews

FS 60B Fire Crew Firefighter (Cal Fire Seasonal)	10/04/2022		1/18/2022
FS 61 Basic Firefighter Training (Basic 32)	10/04/2022		12/01/2020
FS 64 Fire Instructor 1 Instructional Methodology	10/04/2022		05/18/2021
FS 64B Instructor II Instruct Develop	10/04/2022		05/04/2021
FS 65A Driver Operator IA	10/04/2022		05/04/2021
FS 65B Driver Operator 1B	10/04/2022		05/04/2021
FS 65C Driver Operator 1C	10/04/2022		05/04/2021
FS 70 Heavy Equipment Boss (S-236)	10/4/2022		05/04/2021
FS 70A Single Resource Boss Academy	10/04/2022		05/04/2021
FS 70B Engine Boss (Single Recourse)	10/04/2022		05/04/2021
FS 70C Single Resource Crew Boss	10/04/2022		05/04/2021
FS 72 HazMat First Responder Op	10/04/2022		05/04/2021
FS 72A HazMat First Responder Refresher	10/04/2022		05/04/2021
FS 72B HazMat First Responder Operation- Decontamination	10/04/2022		05/18/2021
FS 73A Incident Business Management(S-260)	09/20/2022		9/20/2022
FS 74 Fire in the Interface (S-215)	10/04/2022		12/01/2020
FS 75 Fire Behavior (S290)	10/04/2022		05/18/2021
FS 76 Firefighter Type 1 (Squad Boss) S-131	10/04/2022		05/04/2021
FS 78 Fellowship to Leadership L-280	10/04/2022		12/01/2020
FS 80 Firefighter Survival	10/04/2022		05/18/2021
FS 81 Wildland Firefighter Safety and Survival	10/04/2022		12/01/2020
FS 84 Lessons Learned (Fatality Fire Case Studies)	11/1/2022 inactivated		02/16/2021
FS 85 Understanding Maps, Compass & GPS	10/04/2022		05/04/2021

Lassen Community College  
Status of Curriculum Reviews

FS 87 Expanded Dispatch Record	10/04/2022		10/18/2022
FS 89 Wildfire Chainsaws (S212)	09/20/2022		12/01/2020
FS 90 Portable Pumps and Water Use (S211)	10/18/2022		2/16/2022
FS 92A Company Officer 2A- Human Resources Management for Company Officers	10/04/2022		05/04/2021
FS-92B Company Officer 2B - General Administrative Functions for Company Officers	10/04/2022		05/04/2021
FS-92C Company Officer 2C - Fire Inspections and Investigation for Company Officers	10/04/2022		05/04/2021
FS 92D Company Officer 2D: All-Risk Command Operations	10/04/2022		05/04/2021
FS-92E Company Officer 2E - Wildland Incident Operations for Company	10/04/2022		05/04/2021
FS 93 Fire Fighter I	10/04/2022 Inactivated		1/18/2022
FS 94 Strike Team Leader (S330)	10/04/2022		05/04/2021
FS 95 - Initial Attack Incident Command (S-200)	10/04/2022		05/04/2021
FS 96 Low Angle Rope Rescue	10/04/2022		05/04/2021
FS 97 Fire Control 4: Controlling Ignitable Liquids and Gases	10/04/2022		05/04/2021
FS 98.18 Annual Fireline Safety Refresher Training	10/04/2022		05/04/2021
FS 98.20 Annual Hired Equip Ref	10/04/2022		05/04/2021
FS 98.21 Volunteer fire Academy	10/04/2022		05/04/2021
FS 156 Pump Operation	10/04/2022		05/04/2021
<b>Degrees &amp; Certificates</b>			<b>Program PSLO mapping reviewed</b>
AS Fire Technology	11/01/2022		11/01/2022
CA Fire Technology	11/01/2022		11/01/2022
CA Basic Wildland Firefighter	11/01/2022		11/01/2022

Lassen Community College  
Status of Curriculum Reviews

COA Cal Fire Basic Academy	11/01/2022		11/01/2022
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\_\_\_\_\_  
Dan Weaver, Fire Science Director Signature 12/6/22  
Date

  
\_\_\_\_\_  
Tom Downing, Curriculum and Academic Standards Committee Co-Chair Signature 11/29/2022  
Date

  
\_\_\_\_\_  
Michell Williams, Interim Dean of Instructional Services 12/1/2022  
Date

**Appendix C:  
Signed Curriculum Review Form  
Forestry Management**

Lassen Community College  
 Status of Curriculum Reviews

Forestry Management Instructional Program Review:

Status of Curriculum Review: 10/01/2024

Course Name	Curriculum Committee Review Completed	Curriculum Committee Review Not Completed	Course SLO mapping reviewed
FOR 1 Intro to Forestry	10/1/24		10/1/24
FOR 2 Forest Ecology	10/1/24		10/1/24
FOR 3 Forest Measurements	10/1/24		10/1/24
FOR 4 Forest Health and Protection	10/1/24		10/1/24
FOR 5 Dendrology	10/1/24		10/1/24
FOR 6 Intro to Forest Operations	10/1/24		10/1/24
FOR 7 Intro to Wildland Fire	10/1/24		10/1/24
<b>Degrees &amp; Certificates</b>			<b>Program PSLO mapping reviewed</b>
AS Forestry Management	10/1/24		10/1/24
CA Forestry Management	10/1/24		10/1/24



11/20/24

Dan Weaver, Fire Science Director Signature

Date



11/21/24

Melinda Duerksen, Curriculum and Academic Standards Committee Chair

Date



11/21/24

Mitchell Williams, Dean of Instructional Services

Date

**Appendix D:  
Signed Curriculum Review Form  
Aeronautics/Aviation**

Lassen Community College  
 Status of Curriculum Reviews


**Aeronautics Instructional Program Review:**

Status of Curriculum Review: 10/01/2024

Course Name	Curriculum Committee Review Completed	Curriculum Committee Review <u>Not</u> Completed	Course SLO mapping reviewed
AERO 1A	5/16/23		5/16/23
AERO 50	10/1/24		10/1/24

 11/20/24  
 \_\_\_\_\_  
 Dan Weaver, Fire Science Director Signature Date

 11/21/24  
 \_\_\_\_\_  
 Melinda Duerksen, Curriculum and Academic Standards Committee Chair Date

 11/21/24  
 \_\_\_\_\_  
 Mitchell Williams, Dean of Instructional Services Date

**Appendix E:  
Fire Tech & Forestry  
Advisory Committee List**

## 2023-2025 Lassen College Forestry & Fire Technology Programs Advisory Committee List

	Individual	Agency	Job Title	Email	Contact Number	
1	Kim Keith	Alliance for Workforce Development	Agency Representative	<a href="mailto:kkeith@ncen.org">kkeith@ncen.org</a>	530-257-5057	Voting
2	Korey Bowser	Bureau of Land Management	Battalion Chief 8115 Fire Op	<a href="mailto:kbowser@blm.gov">kbowser@blm.gov</a>	530-252-5363	Voting
3	Ryan Danielson	CAL FIRE	Training Officer	<a href="mailto:ryan.danielsen@fire.ca.gov">ryan.danielsen@fire.ca.gov</a>	530-256-3589	Voting
4	Nick Garcia	CAL FIRE	Fire Captain Training/Safety	<a href="mailto:Nick.garcia1@fire.ca.gov">Nick.garcia1@fire.ca.gov</a>	530-310-2227	Voting
5	Christian Sherfy	CAL FIRE	Fire Captain – LMU Training	<a href="mailto:christian.sherfy@fire.ca.gov">christian.sherfy@fire.ca.gov</a>	530-310-2225	Voting
6	Dean Fehler	CAL FIRE-SVT	Administrative Captain	<a href="mailto:dean.fehler@fire.ca.gov">dean.fehler@fire.ca.gov</a>	530-257-2727	Voting
7	Chris Hallmark	CCC/HDSP Fire Department	Fire Chief	<a href="mailto:chris.hallmark@cdcr.ca.gov">chris.hallmark@cdcr.ca.gov</a>	530-257-4311 ext. 5	Voting
8	Mike Wilson-Young	CCC/HDSP Fire Department	Retired Fire Captain	<a href="mailto:m.wilsonyoung@gmail.com">m.wilsonyoung@gmail.com</a>	530-249-2355	Voting
9	Brad Medvin	CCC/HDSP Fire Department	Fire Captain	<a href="mailto:bradley.medvin@cdcr.ca.gov">bradley.medvin@cdcr.ca.gov</a>	530.257.2181 ext. 4	Voting
10	Ernie Coe	Janesville Fire Protection District	Fire Captain / Training	<a href="mailto:jvhazmat@gmail.com">jvhazmat@gmail.com</a>	530-253-2177	Voting
11	Mike Rivas	Lassen Community College	Adjunct Fire Tech Faculty	<a href="mailto:mrivas@lassencollege.edu">mrivas@lassencollege.edu</a>	530-251-8829	Voting
12	Monte Keady	Lassen Community College	Adjunct Fire Tech Faculty	<a href="mailto:mkeady@lassencollege.edu">mkeady@lassencollege.edu</a>	530-251-8830	Voting
13	Christi Myers	Norcal EMS	BSN, RN, PHN	<a href="mailto:cmyers@lassencollege.edu">cmyers@lassencollege.edu</a>	530-257-6181 ext. 8	Voting
14	Leon Myers	Susanville Fire Department	Fire Captain	<a href="mailto:lmyers@cityofsusanville.org">lmyers@cityofsusanville.org</a>	530-249-7041	Voting
15	Mark Pustejovsky	Sierra Pacific Industries	Northern Sierra Area Reforestation Manager	<a href="mailto:mpustejovsky@spi-ind.com">mpustejovsky@spi-ind.com</a>	(530) 604-6662	Voting
16	Brandie Cooper	Susanville Indian Rancheria	Natural Resources Director	<a href="mailto:bcooper@sir-nsn.gov">bcooper@sir-nsn.gov</a>	530-251-5636	Voting
17	Allen Schultze	USFS, Lassen National Forest	Forest Superintendent 9	<a href="mailto:allenschultze@usda.gov">allenschultze@usda.gov</a>	530-310-3471	Voting
18	Fernando Estrada	USFS, Lassen NF, Eagle Lake	Captain E-381	<a href="mailto:festrada02@usda.gov">festrada02@usda.gov</a>	530-252-6684	Voting
19	Wyatt Crum	USFS, Lassen National Forest	Forest Fire Training Officer	<a href="mailto:wyatt.crum@usda.gov">wyatt.crum@usda.gov</a>	530-816-0117	Voting
20	Morgan Nugent	Lassen High School	Superintendent/Principal	<a href="mailto:morgan.nugent@lassenshigh.org">morgan.nugent@lassenshigh.org</a>	530-257-5134	Voting
21	Michell Williams	Lassen Community College	Interim Dean of Instruction	<a href="mailto:Mwilliams@lassencollege.edu">Mwilliams@lassencollege.edu</a>	530-257-6181 ext. 8	Non-Voting
22	Tom Downey	Lassen Community College	CTE Division Chair	<a href="mailto:t Downing@lassencollege.edu">t Downing@lassencollege.edu</a>	530-251-8801	Non-Voting
23	Dan Weaver	Lassen Community College	Fire Technology Director	<a href="mailto:dweaver@lassencollege.edu">dweaver@lassencollege.edu</a>	530-251-8829	Non-Voting
24	Anna Pasqua	Lassen Community College	Fire Technology ISAC	<a href="mailto:apasqua@lassencollege.edu">apasqua@lassencollege.edu</a>	530-251-8829	Non-Voting
25	Adam Runyan	Lassen Community College	Academic Counselor	<a href="mailto:arunyan@lassencollege.edu">arunyan@lassencollege.edu</a>	530-249-8321	Non-Voting

# **Appendix F: Drager Fire Tower Information**



## Quotation



Customer no.  
93056559

Quotation no. 136307053      Date of offer 09/24/2024

Please reference on inquiries

Customer  
LASSEN COMMUNITY COLLEGE  
CRM USE - D017  
478-200 HWY 139  
SUSANVILLE CA 96130-0000

Payer 93056559  
LASSEN COMMUNITY COLLEGE  
CRM USE - D017  
478-200 HWY 139  
SUSANVILLE CA 96130-0000

Your request  
09/24/2024  
RFQ DATE: 09/06/2024  
Deputy Director Dan Weaver

Ship-To party 93056559  
LASSEN COMMUNITY COLLEGE  
CRM USE - D017  
478-200 HWY 139  
SUSANVILLE CA 96130-0000

Dear Customer,

Thank you for your inquiry. Please find enclosed our corresponding offer.  
If you have any further questions, please do not hesitate to contact us.

Quotation no.: 136307053  
Responsible: MATT LUCHETTA  
  
Telephone: 626-614-7975  
Fax:  
E-mail: matt.luchetta@draeger.com

Best regards  
Dräger Inc.

This document has been electronically generated and is valid without a signature.

**Dräger Inc.**  
Our Tax ID: 23-1699096  
3135 Quarry Road; Telford, PA 18969  
An Equal Opportunity Employer M / F / V / H  
Telephone 800-437-2437  
<http://www.draeger.com>

Remit to:  
**LOCKBOX (Standard USPS)**  
Dräger, Inc.  
PO Box 13369  
Newark, New Jersey  
07101-3362

Remit to:  
**LOCKBOX (Overnight)**  
FIS Lockbox Processing  
Lockbox #13369  
100 Grove Road  
Suite E  
West Deptford, NJ 08066

Remit US Wire Transfers to:  
Account Name: Dräger Inc.  
Account Number: 00-494-936  
Transit Routing: 021001033  
SWIFT: BKTRUS33  
Deutsche Bank Trust Company Americas  
60 Wall Street 25th Fl, New York, NY 10005



# Quotation



Customer no.  
93056559

Quotation no. 136307053      Date of offer 09/24/2024

Please reference on inquiries

Payer  
93056559

Page 2 / 6

Pos.	Quant.	Part no.	Description	Unit price USD	Total price USD
			PLEASE SUBMIT / REFER TO THIS QUOTATION WHEN PLACING YOUR ORDER ***SIGNED ES PAD FORM REQUIRED***		
0010	1 EA	1903015	<b>DRAGER SWEDE SURVIVAL PHASE</b> Five 40' One 20' One 10' open Burn Chamber w/ insulated window One 5' closed burn chamber w/ insulated window and clean out deck 6 post recon wall system Tilt roof prop w/ instructor's platform Exterior stairs ground to roof of 3rd floor # Standard doors Standard windows VEIS window w/ forcible entry (flat stock) Smooth wall under all 2nd and 3rd floor C side windows Standpipe w/ FDC and 2 1/2" outlet first to third floor 8' exterior walkway C side of second floor Roof top training deck w/ safety railing Two rappel bars w/ swing gates Two confined space hatches-Roof and third floor	544,562.50	544,562.50
0020	1 EA	1903012	<b>ON-SITE INSTALLATION &amp; SET UP</b> Dräger contracted and project-managed installation team ensures that your system is installed properly, safely and with minimal disruption. Pre-installation site surveys and in-process review of the build ensures that you are getting the most value for your project. Installation and crane services are insured, bonded and operate within OSHA guidelines for your added protection.	29,700.00	29,700.00
0030	1 EA	1903013	<b>TRAIN THE TRAINER PROGRAM</b> Dräger is committed to developing and	7,800.00	7,800.00



# Quotation



Customer no.  
93056559

Quotation no. 136307053      Date of offer 09/24/2024

Please reference on inquiries

Payer  
93056559

Page 3 / 6

Pos.	Quant.	Part no.	Description	Unit price USD	Total price USD
			<p>offering the most comprehensive training programs in North America. Dräger Swede Survival Systems and Dräger certified instructional training programs have been designed and delivered in accordance with training methods developed by the Swedish Rescue Services agency through the Swedish Rescue Training Center (SRTC).</p> <p>The training consists of two parts: The first part is a two-day, on-site training course for up to ten (10) of the department's instructors. The second part is a complete documentation package on operation &amp; maintenance of the system; enables you to train with confidence.</p> <ul style="list-style-type: none"><li>- Certified instructors</li><li>- Fire behavior</li><li>- Fire control</li><li>- Hydration</li><li>- SCBA &amp; safety equipment training</li><li>- Heat stress management</li><li>- Smoke &amp; ventilation exercises</li><li>- Container management</li><li>- Ignition sources</li><li>- Information on fire gases</li><li>- Container operations</li><li>- Heat stress</li><li>- Thermal imaging camera usage</li><li>- Recognition of pre-flashover conditions</li><li>- Nozzle techniques</li><li>- Overall safety</li></ul>		
0040	1 EA	1903010	<b>FREIGHT TO CUSTOMER SITE</b> - Pricing does not include PE Stamped drawings. Can be provided at an additional cost if required by customer.	9,000.00	9,000.00



## Quotation



Customer no.  
93056559

Quotation no. 136307053 | Date of offer 09/24/2024

Please reference on inquiries

Payer  
93056559

Page 4 / 6

Pos.	Quant.	Part no.	Description	Unit price USD	Total price USD
			-----		
			Net value excl. Sales Tax		591,062.50
			+ Net Sales Tax		48,020.16
			-----		
			Total amount		639,082.66
			=====		
			<p>Customer is hereby informed that section 1128B(b) of the Social Security Act may apply, which requires that discounts and other reductions in price or the existence of discount programs be properly disclosed and reflected in the costs claimed or charges made by a provider under Medicare or a Federal or State Health Program.</p> <p>PLEASE CHECK THIS QUOTE / ORDER CAREFULLY FOR ACCURACY IN PRICING, PART # AND DESCRIPTION. Contact Customer Service immediately if there are any discrepancies. This acknowledgement and note constitutes the entire agreement with respect to the contemplated transaction and supersedes all previous negotiations, proposals, writings, advertisements, or publications.</p> <p>Draeger, Inc. and the Customer agree that the purchase of any product or service pursuant to this document is subject to the attached terms and conditions, which are incorporated by reference. In the event the purchases are being made under a GPO identified in this document, those terms and conditions are also incorporated by reference. If there is a conflict between the GPO terms and conditions and the attached terms and conditions, the GPO terms and conditions shall control.</p>		



# Quotation



Customer no.  
93056559

Quotation no. 136307053      Date of offer 09/24/2024

Please reference on inquiries

Payer  
93056559

Page 4 / 6

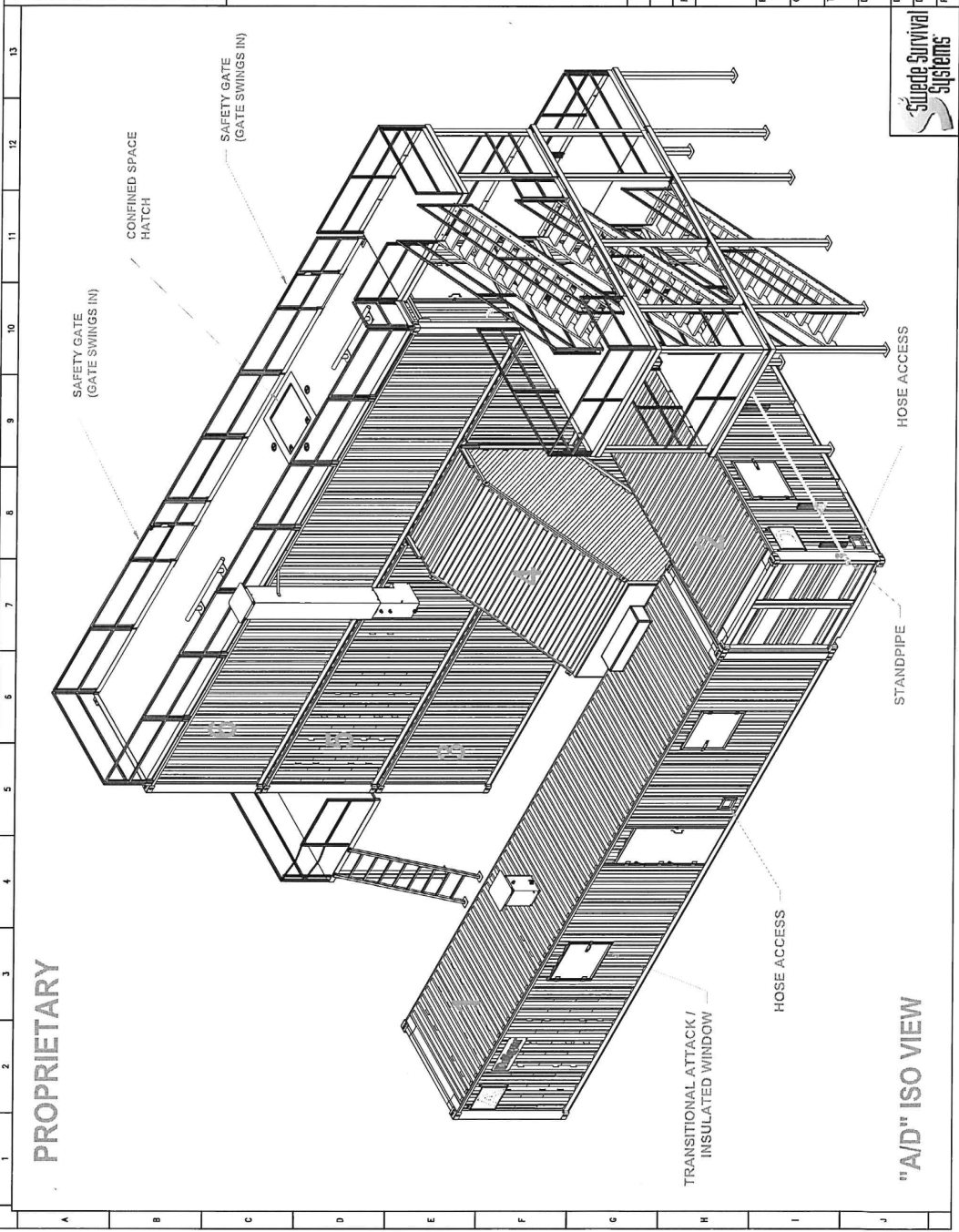
Pos.	Quant.	Part no.	Description	Unit price USD	Total price USD
-----					
Net value excl. Sales Tax					591,062.50
+ Net Sales Tax					48,020.16
-----					
Total amount					639,082.66
=====					
<p>Customer is hereby informed that section 1128B(b) of the Social Security Act may apply, which requires that discounts and other reductions in price or the existence of discount programs be properly disclosed and reflected in the costs claimed or charges made by a provider under Medicare or a Federal or State Health Program.</p> <p>PLEASE CHECK THIS QUOTE / ORDER CAREFULLY FOR ACCURACY IN PRICING, PART # AND DESCRIPTION. Contact Customer Service immediately if there are any discrepancies. This acknowledgement and note constitutes the entire agreement with respect to the contemplated transaction and supersedes all previous negotiations, proposals, writings, advertisements, or publications.</p> <p>Draeger, Inc. and the Customer agree that the purchase of any product or service pursuant to this document is subject to the attached terms and conditions, which are incorporated by reference. In the event the purchases are being made under a GPO identified in this document, those terms and conditions are also incorporated by reference. If there is a conflict between the GPO terms and conditions and the attached terms and conditions, the GPO terms and conditions shall control.</p>					

THIS DRAWING AND THE INFORMATION HEREIN CONTAINED ARE THE PROPERTY OF DRÄGER Inc. WHICH HAS FURNISHED THEM IN CONFIDENCE UPON THE UNDERSTANDING AND CONDITIONS ALL PERSONS, FIRMS OR CORPORATIONS RECEIVING SUCH DRAWING OR INFORMATION SHALL BE HELD TO HAVE RECEIVED THEM IN CONFIDENCE AND TO AGREE TO MAKE NO COPY, DUPLICATION, DISCLOSURE OR USE WHATSOEVER OF ALL OR ANY PART THEREOF EXCEPT AS EXPRESSLY AUTHORIZED IN WRITING BY DRÄGER Inc.

THESE DRAWINGS ARE FOR CONCEPTUAL USE ONLY, NOT FOR FABRICATION.

REV #	DATE	DESCRIPTION
B	01/26/22	REVISED PER CUSTOMER
A	01/12/22	ISSUED FOR APPROVAL

<b>Dräger</b>	
PRODUCT	PHASE V PLUS
CUSTOMER	ALTOONA FIRE DEPT. ALTOONA, IOWA
TITLE	A/D SIDES ISO VIEW
DWG NO.	SH 05 OF 19
DATE	JAN 12, 2022
SCALE	NTS
DRW BY	MATT L.
REV.	B
Proj	4302275551



**PROPRIETARY**

**"A/D" ISO VIEW**



**Appendix G:  
CSU, Los Angeles Articulation Agreement**

Major Articulation Agreement  
**Fire Protection Administration and Technology, B.S.**

Effective during the 2024-2025 academic year

**To: California State University, Los Angeles**  
 2024-2025 General Catalog, Semester



**From: Lassen Community College**  
 2024-2025 General Catalog, Semester

## LOWER DIVISION REQUIRED COURSES

### 1 Complete the following

<b>FPAT 2900</b>	Principles of Emergency Services	3.00	← <b>FS 5</b>	Fire Orientation and Management	3.00
<b>FPAT 2901</b>	Fire Prevention	3.00	← <b>FS 3</b>	Fundamentals of Fire Prevention	3.00
<b>FPAT 2902</b>	Fire Protection Systems	3.00	← <b>FS 4</b>	Fundamental of Fire Prevention Equipment	3.00
<b>FPAT 2903</b>	Building Construction for Fire Protection	3.00	← <b>FS 6</b>	Building Construction for Fire Protection	3.00
<b>FPAT 2904</b>	Fire Behavior and Combustion	3.00	← <b>FS 13</b>	Fire Behavior and Combustion	3.00
<b>FPAT 2905</b>	Principles of Fire and Emergency Services Safety and Survival	3.00	← <b>FS 14</b>	Principles of Fire Safety and Survival	3.00

## LOWER DIVISION ELECTIVES

### 2 Complete 3 from the following

		3.00	+	No Course Articulated
<b>FPAT2907</b>	Fire Hydraulics	3.00	+	No Course Articulated
<b>FPAT2908</b>	Fire Investigation I	3.00	+	No Course Articulated
<b>FPAT2909</b>	Fire Company Officer	3.00	+	No Course Articulated
<b>FPAT2910</b>	Structural Firefighting	3.00	+	No Course Articulated
<b>FPAT2911</b>	Hazardous Materials I	3.00	+	No Course Articulated
<b>FPAT2912</b>	Related Codes and Ordinances	3.00	+	No Course Articulated
<b>FPAT2913</b>	Emergency Medical Technical I	3.00	+	No Course Articulated
<b>FPAT2914</b>	Wildland Fire Control	3.00	+	No Course Articulated
<b>FPAT2915</b>	Hazardous Materials II	3.00	+	No Course Articulated
<b>FPAT2906</b>	Fire Apparatus and Equipment	3.00	+	No Course Articulated

## DIRECTED ELECTIVES

3

\*\*REFER TO CATALOG\*\*

<b>POLS 2810</b>	Quantitative Methods in Political Science	4.00	+	No Course Articulated
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END OF AGREEMENT

# **Appendix H: Fire Technology Advising Plans**

# **FIRE TECHNOLOGY**

## **Associate in Science Degree**

### **Fire Technology**

Required Core Courses: 18 units

Total Elective Units: 12 units

Total Units: 60 units

<b>Course Number</b>	<b>Course Title</b>	<b>Fall</b>	<b>Spring</b>
FS 3	Fundamentals of Fire Prevention		3(even)
FS 4	Fire Protection Equipment and Systems	3(odd)	
FS 5	Fire Organization and Management	3	
FS 6	Building Construction for Fire Protection	3(even)	
FS 13	Fire Behavior and Combustion	3(even)	
FS 14	Principles of Fire Safety and Survival		3 (odd)

Required Electives: Select 12 units from the following

<b>Course Number</b>	<b>Course Title</b>	<b>Fall</b>	<b>Spring</b>	<b>Summer</b>
BUS 25	Small Business Management		3	
BUS 27	Business Communications	3	3	
EMT 21	Emergency Medical Responder	2.5	2.5	
EMT 60	Emergency Medical Technician	6.5	6.5	
FS 8	Wildland Fire Suppression		2	
FS 20	First Aid/CPR for Public Safety Employees	1.5		
FS 23	Firing Operations (S-219)		1(even)	
FS 26	Basic Air Operations (S-270)		1(even)	
FS 49	Fire Technology Work Experience	1-8	1-8	
FS 50	Rapid Intervention Crew (RIC) Operations		0.5	
FS 51	Introduction to Fire Technology Careers	1		
FS 52	Intermediate Incident Command System for Expanding Incidents (ICS-300)	Agency	Request	
FS 56	Helicopter Crewmember (S-271)		2 even)	
FS 57	Vehicle Extrication			1
FS 59	Confined Space Awareness	0.5		
FS 60.1	Cal Fire Module 1A Structural Firefighter		6	
FS-60C	Cal Fire Module 1C Wildland Firefighter	3	3	
FS 61	Basic Firefighter Training (Basic 32) (S-130, L-180, S-190)	2	2	
FS 64	Fire Instructor 1-Instructor Methodology	2.0		
FS 64B	Fire Instructor 2- Instructor Development		2(odd)	
FS 65A	Driver Operator 1A		1.5	
FS 65B	Driver Operator 1B		1.5	
FS 65C	Wildland Fire Apparatus Operations			0.5
FS 70	Heavy Equipment Boss (S-236)		1 (even)	
FS 70A	Single Resource Boss Academy (S-230, S-231)		2.5 (even)	

			n)	
FS 70B	Engine Boss (S-231) (Single Resources)	Scheduled	Up on	Request
FS 70C	Single Resource Crew Boss (S-230)	Scheduled	Upon	Request
FS 72	HazMat First Responder Operations	1	1	
FS 72A	HazMat First Responder – Refresher	Scheduled	Upon	request
FS 72B	HazMat First Responder- Decontamination	Scheduled	Upon	Request
FS 72C	HazMat First Responder Awareness	Scheduled	Upon	Request
FS 72IC	IC HazMat Incident Commander	Scheduled	Upon	Request
FS 73A	Incident Business Management (S-260)	Scheduled	Upon	Request
FS 74	Fire in the Interface (S-215)		1.5	
FS 75	Fire Behavior (S-290)		2 (even)	
FS 76	Firefighter Type 1 (Squad Boss S-131)		0.5 (even)	
FS 78	Followership to Leadership (L-280)		0.5	
FS 80	Firefighter Survival	0.5		
FS 81	Wildland Firefighter Safety and Survival	0.5		
FS 84	Lessons Learned (study of Fatal Fires)		1	
FS 85	Understanding Maps, Compass & GPS (Basic Land Navigation)		1	
FS 87	Expanded Dispatch Recorder (D-110)		1 (Agency)	Request)
FS 89	Wildland Fire Chainsaws(S-212)		1	
FS 90	Portable Pumps and Water Use (S-211)		1	
FS 92A	Company Officer 2A-Human Resource Management for Company Officers		2	
FS 92B	Company Officer 2B -General Administrative Functions for Company Officers		1	
FS 92C	Company Officer 2C: Fire Inspections and Investigation for Company Officers		2	
FS 92D	Company Officer 2D: All-Risk Command Operations	2		
FS 92E	Company Officer 2E-Wildland Incident Operations for Company Officers	2		
FS 94	All Risk Strike Team Leader(S-330)		1.5 (even)	
FS 95	Initial Attack Incident Command (S-200)		1.5 (even)	
FS 96	Low Angle Rope Rescue		0.5	
FS 96A	Rope Rescue Awareness/Operations		1.5	
FS 97A	Fire Control 4A: Controlling Ignitable Liquids and Gases			0.5
FS 98.18	Annual Fireline Safety Refresher Training (RT-130)	Agency	Request	
FS 98.20	Incident Safety Awareness for Hired Vendors		0.5	
FS 98.21	Volunteer Firefighter Academy		2.5	

**Electives:** 9 units numbered 1-99

**General Education Requirements:** 21 units

See a counselor to prepare your educational plan with the latest scheduling information.

**FIRE TECHNOLOGY**  
**Certificate of Achievement**  
**Fire Technology**

Required Core Courses: 18 units

Total Elective Units: 30 units

Course Number	Course Title	Fall	Spring
FS 3	Fundamentals of Fire Prevention		3(even)
FS 4	Fire Protection Equipment and Systems	3(odd)	
FS 5	Fire Organization and Management	3	
FS 6	Building Construction for Fire Protection	3(even)	
FS 13	Fire Behavior and Combustion	3(even)	
FS 14	Principles of Fire Safety and Survival		3 (odd)

Required Electives: Select 12 units from the following

Course Number	Course Title	Fall	Spring	Summer
BUS 25	Small Business Management		3	
BUS 27	Business Communications	3	3	
EMT 21	Emergency Medical Responder	2.5	2.5	
EMT 60	Emergency Medical Technician	6.5	6.5	
FS 8	Wildland Fire Suppression		2	
FS 20	First Aid/CPR for Public Safety Employees	1.5		
FS 23	Firing Operations (S-219)		1(even)	
FS 26	Basic Air Operations (S-270)		1(even)	
FS 49	Fire Technology Work Experience	1-8	1-8	
FS 50	Rapid Intervention Crew (RIC) Operations		0.5	
FS 51	Introduction to Fire Technology Careers	1		
FS 52	Intermediate Incident Command System for Expanding Incidents (ICS-300)	Agency	Request	
FS 56	Helicopter Crewmember (S-271)		2 even)	
FS 57	Vehicle Extrication			1
FS 59	Confined Space Awareness	0.5		
FS 60.1	Cal Fire Module 1A Structural Firefighter		6	
FS-60C	Cal Fire Module 1C Wildland Firefighter	3	3	
FS 61	Basic Firefighter Training (Basic 32) (S-130, L-180, S-190)	2	2	
FS 64	Fire Instructor 1-Instructor Methodology	2.0		
FS 64B	Fire Instructor 2- Instructor Development		2(odd)	
FS 65A	Driver Operator 1A		1.5	
FS 65B	Driver Operator 1B		1.5	
FS 65C	Wildland Fire Apparatus Operations			0.5
FS 70	Heavy Equipment Boss (S-236)		1 (even)	
FS 70A	Single Resource Boss Academy (S-230, S-231)		2.5 (even)	

			n)	
FS 70B	Engine Boss (S-231) (Single Resources)	Scheduled	Upon	Request
FS 70C	Single Resource Crew Boss (S-230)	Scheduled	Upon	Request
FS 72	HazMat First Responder Operations	1	1	
FS 72A	HazMat First Responder – Refresher	Scheduled	Upon	request
FS 72B	HazMat First Responder- Decontamination	Scheduled	Upon	Request
FS 72C	HazMat First Responder Awareness	Scheduled	Upon	Request
FS 72IC	IC HazMat Incident Commander	Scheduled	Upon	Request
FS 73A	Incident Business Management (S-260)	Scheduled	Upon	Request
FS 74	Fire in the Interface (S-215)		1.5	
FS 75	Fire Behavior (S-290)		2 (even)	
FS 76	Firefighter Type 1 (Squad Boss S-131)		0.5 (even)	
FS 78	Followership to Leadership (L-280)		0.5	
FS 80	Firefighter Survival	0.5		
FS 81	Wildland Firefighter Safety and Survival	0.5		
FS 84	Lessons Learned (study of Fatal Fires)		1	
FS 85	Understanding Maps, Compass & GPS (Basic Land Navigation)		1	
FS 87	Expanded Dispatch Recorder (D-110)		1 (Agency)	Request
FS 89	Wildland Fire Chainsaws(S-212)		1	
FS 90	Portable Pumps and Water Use (S-211)		1	
FS 92A	Company Officer 2A-Human Resource Management for Company Officers		2	
FS 92B	Company Officer 2B -General Administrative Functions for Company Officers		1	
FS 92C	Company Officer 2C: Fire Inspections and Investigation for Company Officers		2	
FS 92D	Company Officer 2D: All-Risk Command Operations	2		
FS 92E	Company Officer 2E-Wildland Incident Operations for Company Officers	2		
FS 94	All Risk Strike Team Leader(S-330)		1.5 (even)	
FS 95	Initial Attack Incident Command (S-200)		1.5 (even)	
FS 96	Low Angle Rope Rescue		0.5	
FS 96A	Rope Rescue Awareness/Operations		1.5	
FS 97A	Fire Control 4A: Controlling Ignitable Liquids and Gases			0.5
FS 98.18	Annual Fireline Safety Refresher Training (RT-130)	Agency	Request	
FS 98.20	Incident Safety Awareness for Hired Vendors		0.5	
FS 98.21	Volunteer Firefighter Academy		2.5	

# **FIRE TECHNOLOGY**

## **Certificate of Achievement** **Basic Wildland Firefighter**

Required Core Courses: 17.5 units

Total Core Units: 19.5 units

<b>Course Number</b>	<b>Course Title</b>	<b>Fall</b>	<b>Spring</b>
FS 5	Fire Orientation and Organization	3	
FS 8	Wildland Fire Suppression		2
FS 20	First Aid/CPR for Public Safety Employees	1.5	
FS 51	Introduction to Fire Technology Careers	1	
FS 61	Basic Firefighter Training (Basic 32)**	2**	2**
FS 72	HazMat First Responder Operations	1	
FS 74	Fire in the Interface (S-215)	1	
FS-60C	**Cal Fire Module 1C Wildland Firefighter	3**	3**
FS 85	Understanding Maps, Compass & GPS		0.5
FS 89	Wildland Fire Chainsaws		1
FS 90	Portable Pumps & Water Use (S-211)		1
FS 98.21	Volunteer Firefighter Academy		2.5

\*\*Course(s) can be taken in either Fall or Spring Semester.

# **FIRE TECHNOLOGY**

## **Certificate of Achievement**

### **CAL FIRE ACADEMY**

Required Core Courses: 16.5 units

Total Core Units: 16.5 units

<b>Course Number</b>	<b>Course Title</b>	<b>Fall</b>	<b>Spring</b>
FS 20	First Aid/CPR for Public Employees	1.5**	1.5**
FS 51	Introduction to Fire Technology Careers	1**	1**
FS 59	Confined Space Awareness	0.5**	0.5**
FS 60.1	Cal Fire Module 1A Structural Firefighter		6
FS 60C	**Cal Fire Module 1C Wildland Firefighter	3**	3**
FS 61	Basic Firefighter Training (Basic 32)**	2**	2**
FS 72	HazMat First Responder Operations	1**	1**
FS 80	Firefighter Survival	1**	1**
FS 81	Wildland Firefighter Safety and Survival**	0.5**	0.5**

\*\*Course(s) can be taken in either Fall or Spring Semester.

**Appendix I:  
Forest Management Advising Plan**

## **Forestry Management** **Associate in Science Degree**

**Required Core Courses:** 19 units

**Total Required Units:** 29.5 units  
**Total Units:** 60 units for AS degree

<b>Course Number</b>	<b>Course Title</b>	<b>Fall</b>	<b>Spring</b>
FOR 1	Introduction to Forestry	3	
FOR 2	Forest Ecology		3 (odd)
FOR 3	Forest Measurements		4 (even)
FOR 4	Forest Health an Protection	1.5 (odd)	
FOR 5	Dendrology	3 (even)	
FOR 6	Introduction to Forest Operations		3 (even)
FOR 7	Introduction to Wildland Fire		1.5 (odd)

**Additional required units :** 10.5 units (Including the following)

<b>Course Number</b>	<b>Course Title</b>	<b>Fall</b>	<b>Spring</b>	<b>Summer</b>
FS 61	Basic Firefighter Training (Basic 32)**	2**	2**	
FS 85	Understanding Maps, Compass & GPS		0.5	
FS 89	Wildland Fire Chainsaws(S-212)		1	
FS 72	HazMat First Responder Operations	1		
AGR-19	Soils	3(even)		
AERO 50	UAS Ground School		3	

\*\* These Courses can be taken in either the Fall **OR** Spring Semesters\*\*

**Fire Science Electives:** 9.5 Units numbered 1-99

**General Education Requirements:** 21 units

See a counselor to prepare your educational plan with the latest scheduling information.

### **Program Student Learning Outcomes**

1. Demonstrate knowledge of forest ecology and understand how forests respond to natural disturbances or management activities.
2. Understand the use of fire in management of natural resources.
3. Develop quantitative and qualitative skills for data collection, analysis and interpretation for forest ecology and management.
4. Develop an understanding of forestry products and be able to evaluate typical financial investments in forestry.
5. Demonstrate an understanding of forest conservation, forest ecology, and resource management conflicts and solutions from multiple perspectives ranging from private landowners to industry and public lands.
6. Effectively analyze and integrate the social and natural sciences to understand diverse challenges to forest management and conservation

Revised 11-09-2024

## **Forestry Management Certificate of Achievement**

**Required Core Courses:** 19 units

**Total Required Units:** 29.5 units

**Total Units:** 29.5

Course Number	Course Title	Fall	Spring
FOR 1	Introduction to Forestry	3	
FOR 2	Forest Ecology		3 (odd)
FOR 3	Forest Measurements		4 (even)
FOR 4	Forest Health and Protection	1.5 (odd)	
FOR 5	Dendrology	3 units	
FOR 6	Introduction to Forest Operations		3 (even)
FOR 7	Introduction to Wildland Fire		1.5 (odd)

**Additional required units :** 10.5 units (Including the following)

Course Number	Course Title	Fall	Spring	Summer
FS 61	Basic Firefighter Training (Basic 32)**	2	2	
FS 85	Understanding Maps, Compass & GPS		0.5	
FS 89	Wildland Fire Chainsaws(S-212)		1	
FS 72	HazMat First Responder Operations	1		
AGR-19	Soils	3(even)		
AERO 50	UAS Ground School		3	

\*\* These Courses can be taken in either the Fall **OR** Spring Semesters\*\*

### **Program Student Learning Outcomes**

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