Fire Science - Associate of Applied Science

Current Compliance Year: 2024-2025
Full review

Resources

Before completing this form:

- Review the resources available to assist you.
- The link in WorkZone directs you to your program's folder for this year's review, which includes:
  - A full copy of your previous report with the SLOA of record attached.
  - A folder with previous SLOAs as individual documents.
- The Resources folder contains:
  - Templates for creating or updating SLOAs.
  - Training materials from the SLOA and Program Review Training held in August.
- Additional tools and information can be found on the Academic Program Review Website.

If you have questions or concerns during this process, please reach out to mailto:uaf-accreditation@alaska.edu

Recent Recommendations

Feedback will include recommendations from the last Expedited Review or from your most recent review by your school or college. You may not see any feedback or recommendations until you have completed your first full or mid-cycle review.

No overall feedback was provided during your last review. No response is necessary.

Response to Previous Recommendations (if any):

N/A

Student Learning Outcomes

The previous Student Learning Outcomes Assessment has been submitted as its own report. Going forward you will use the following prompts to discuss the success of your most recent SLOA plan and address your assessment activities since your last SLOA report (typically the past two years or since your last program review).

Learning outcomes feedback from last review:
Strong alignment with SLOA plan,"Clear, concise presentation of findings"

The SLOA should be updated with the current program title and current student learning outcomes that are used for assessment. Within the high impact practices description, it is mentioned that FIRE F220 "continues to be a capstone." This would be an excellent SLO to have listed within the SLO plan, with explanation of how this capstone is assessed consistently.

Discuss your SLOA findings, changes you are making and what you hope to see as a result:Discuss the curricular changes made based on assessing your SLO. If you haven't made any curricular changes, please explain why not and address what you did notice in the review, including strengths of your curriculum through the assessment of your outcomes:

During this review period, there was a huge decline in students passing the Firefighter I (FFI) and Firefighter II (FFII) examinations. Starting in 2020, our FFI scores dropped below our 80% passing outcome to 67% passing; the following year, 2021, we saw the same result in FFII. The progression from FFI to FFII explains that trend.
At first, the start of COVID-19 in January 2020 was likely to be the contributing factor to this trend. We saw a lack of motivation in online work and an overall shift in student participation. It would be easy to stop at that and blame COVID or the students. This proved to be a wrong assumption.
To address the downward test scores trend, changes were made in how instruction was delivered, in-person testing replaced online testing, and motivational speaking was added to the program. Some of these changes helped but did not bring our scores to our 80% outcome. We finally discovered that the change to online classes with discussion boards was the issue. We stopped requiring the students to do the homework book that comes with the text. Our last several courses dropped online discussion boards and switched to requiring students to complete the student workbook homework assignments. This change can be noted in the 2023-2024 FFI scores and the 2024 FFII scores. We are now meeting the 80% passing rate again and anticipate this will continue to improve.
All other outcomes are still acceptable. We have had some issues with students taking jobs with just the certifications and not finishing an A.A.S. degree. Online instruction options have allowed students to continue their degree while employed.
Feedback response- We focused on the FFI and FFII issues we faced. An update to include the last recommendation is attached.

Supporting Documents
UAF CTC State of Alaska Examination Results

Updated SLOA?
If you are updating your SLOA document, please include it with your report and other supporting documents in your designated folder. It does not need to be filed separately in the "SLOA" folder.

Are communication outcomes embedded in the SLOA Plan?
As of 2017 all Baccalaureate programs were required to embed the communication outcomes within their SLOA Plans, this is optional for non-Baccalaureate programs. Please mark the appropriate box below.

Embedded:	
Not Embedded:	x

Student Success

To access the Student Success Dashboard please sign into a UA computer with VPN connection (if not on campus). You will need your UA credentials and it is best accessed with the most updated version of Chrome, Edge, Firefox or Safari browsers; Internet Explorer is not supported. You will need to filter the data to see your programs. If you need assistance in finding the data for your programs, please contact your data liaison or Julia Manfredini in the PAIR office.

Data Liaisons

Each school or college has a team of Data Liaisons to help you analyze the data provided in the portal and may be able to help you see your data in multiple contexts. You can find a list of data liaisons on the resources page for Program Review.

The college or school level committee will also have access to this data with the goal that by providing these visualizations data availability will be increased.

Data supplied within the dashboard linked below is intended for Academic Program Review and not for any other purpose.

Student Success Data Dashboard

Previous Feedback

The committee appreciates the reflective discussion regarding the drop in [redacted] graduates as well as the active steps that have been taken to monitor and improve the situation for students. Thank you for explaining the trend that shows fluctuation based on degrees awarded. This makes good sense and being aware of trends like these provides opportunities for recruitment during high times of need.

Student Success Data Trends:

Trend	Increase	Decrease	No Change
Persistence		**Slight**	
Pass Rates			**Same trends based on students being employed**
Student Credit Hours	**Increase spike**		
Majors	**Slight increase**		
Degrees Awarded	**Slight increase on spikes**		
Other Trends (Explain in narrative below)	[redacted] **student headcount 2024**		

Equity Gaps

Please discuss any equity gaps identified in your disaggregated student success data and explain how you plan to address them. Please contact your data liaison or make an appointment with Julia Manfredini to learn more about analyzing your data.

We are working to develop better marketing and recruitment for [redacted] in the fire science program. We work with Rural Student Services to do dual advising. In 2025 to increase opportunities for rural firefighters to come to UAF, we hope to bring back our Nanook Wildland Firefighter Crew.

We are also working with UAF rural campuses to design wildland courses in a format that works better for their service areas.

Optional Data Explanation

Feel free to share more of your thoughts on the data provided.

We believe the data shows two major factors in the fire science information collected. Diversity in race and sex increased with program marketing targeting fire science-based classes in the Pacific Northwest. Two schools we market to include lower socioeconomic areas of Washington State as well as several schools that have very diverse student populations. This has resulted in a more diverse fire science program. Additionally, we intentionally share that our program has a large [redacted] student population as we have found this attracts more [redacted] to our program. We believe the fire service should represent the community and intentionally recruit to have more diversity in our program.

Some data spikes correlate with students gaining employment. We see where major metropolitan fire departments' hiring cycles impact student retention.

Our student body that represented the upper class of high school during the 2020 COVID-19 Pandemic appeared to be impacted in our program. We saw more homesickness and depression issues along with a lack of motivation. 2024 data shows improvement as we move into a new group of students. We will continue to monitor data for trends and improvement.

High Impact Practices

According to the AAC&U, High-Impact Educational Practices "have been widely tested and have been shown to be beneficial to college students from many backgrounds." UAF is particularly interested in Undergraduate Research and/or Scholarly Activity because it is one of our mission fulfillment indicators, but all of these researched High-Impact Educational Practices should be reflected in your program's student learning outcomes and curriculum.

Previous Feedback

The program supports some high impact practices. Overall, university field internships are widely viewed as a high impact practice. Such practices tend to be high predictors of student learning and engagement. The Committee feels that reactivating the Firefighter internships will support positive learning experiences.

High-Impact Practices Used in this Program

Please select all high-impact practices your program is currently using from the list below. For any practices you select, provide details in the corresponding narrative section. In the narrative, discuss how your program is implementing these practices, including any successes, known issues, and solutions. If you are considering incorporating any of these practices in the future, share your plans. If your program is not using any of the listed high-impact practices, please use the 'Other or None of These' field to explain how your program supports student success.

Capstone Courses & Projects	**X**	Research (Graduate Level)	
Collaborative Assignments & Projects		Writing-Intensive Courses	
Diversity/Global Learning		Publications	
ePortfolios		Communications	

First-Year Seminars & Experiences		Publications	
Internships	X	Scholarly Activities	
Service or Community-based Learning	X	Other (Please describe in box below)	
Undergraduate Research			

Collaborative Assignments & Projects

(250 Word Limit)

Undergraduate Research

(250 Word Limit)

Diversity/Global Learning

(250 Word Limit)

ePortfolios

(250 Word Limit)

First Year-Seminars & Experiences

(250 Word Limit)

Writing-Intensive Courses

(250 Word Limit)

Service-Learning and/or Community-based Learning

The vast majority of the A.A.S. Fire students are members of the local fire service serving as active-duty emergency medical technicians and firefighters while they earn their degrees. Students can directly apply what they learn in the classroom and labs to actual emergency incidents they respond to in the Fairbanks North Star Borough, Our students serve in the University Fire Department, Chena Gold Stream Fire & Rescue, North Star Volunteer Fire Department, Steese Volunteer Fire Department, Ester Volunteer Fire Department, and Salcha Fire and Rescue. The working experience gained by this service can be used for up to six college FIRE internship credits in the fire degree.

Internships

A majority of the A.A.S. Fire students are members of the local fire service serving as active-duty emergency medical technicians and firefighters while they earn their degrees. This working experience can be up to six college FIRE internship credits in the fire degree. Real-world experience tied to classroom knowledge is the cornerstone of our program as it provides students with a direct correlation between what is taught and how it is implemented in the career field.

Capstone Courses & Projects

FIRE F220 Firefighter Safety, Health, and Survival is a current topics class that covers the 16 Life Safety Initiatives. Students are asked to reflect on their time serving in the fire internships/fire departments and to relate that to the material covered in the fire science program. As an example, organizational culture and personal accountability are topics of discussion in this course. Students are asked to discuss the organizational culture of the fire department they serve and how change management is impacted by culture. Their service provides a rich opportunity to explore actual scenarios they have experienced while working in the fire service and taking classes. Students can

reflect on how important taking personal accountability is from their work experience and going to emergency incidents.

Other or None of these (explain)

(250 Word Limit)

Program Profile and Financial Data

The program review elements in this section usually stay consistent for departments. Any responses you provide will be saved for your next review. Please carefully review the information below and make any corrections or updates as needed to ensure accuracy for the next program review cycle. If any sections are incomplete, please ensure that you provide the necessary information. This will allow you to start from an updated baseline when you revisit these elements in future submissions.

Financial Data Resources

The Board of Regents shapes program review, through BOR Policy 10.06, to support budget increase advocacy in the state legislature. The standardized financial data template should be analyzed with your data liaison to assess your program's capacity and resource status.

To keep integrity and remain standard across all of UAF it is very important that you do not provide any additional or alternative data.

Financial Template

Your data liaison may have uploaded your template to the Google folder for this program, or you may do so now.

Previous Financial Feedback

Feedback will be provided once you have completed a full review.

Previous Profile Feedback

Feedback will be provided once you have completed a full review.

Cost Effectiveness (250 Word Limit)

How does your department/program approach being cost effective?

The fire science program leverages our community partnerships with the local fire service workforce to utilize specialized equipment and additional instructional support. A fire apparatus can cost upwards of one million dollars and we often need two or three at a time. Our industry partners allow us full access to fire apparatus, radios, and other equipment which saves our program from having to own and maintain them. UAF CTC helped establish student firefighter scholarships with Chena Gold Stream Fire & Rescue, Steese Volunteer Fire Department, and North Star Volunteer Fire Department. These scholarships have resulted in over eight million dollars in student funding since their inception in 2009. 70% of applicants to the A.A.S Fire degree do not attend UAF if they do not receive a student firefighter job. By collaborating on the creation of the student fire jobs, UAF helped ensure student enrollment continuity. It should also be noted that the fire science program has one of the largest out-of-state student enrollments. We market to Washington, Oregon, and Idaho high school fire science classes and have dual enrollment agreements with schools outside Alaska. The extra 50% tuition under the Western Undergraduate Exchange is important to UAF as a funding source and is not counted in the fiscal data for the fire program. If all 150% of WUE was funded to the fire science program, our budget would reflect the actual impact fire science has at UAF and its cost-effectiveness.

Program's Value to Mission (250 Word Limit)

Duplicative Programs (250 Word Limit)

Community or Other Partnerships (250 Word Limit)

Value of Service Courses (Optional) (250 Word Limit)

Post-Graduate Success (250 Word Limit)

Throughout the Program Review periods covered, our post-graduate to employment within a year or progression to a bachelor's degree remains close to 90%. We have been experiencing a trend of students leaving the degree program before finishing to obtain employment. In our next review, we will be working towards ensuring degree completion with employment.

Submission

Submitter & Collaborator Names

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Submitter Email

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UNIVERSITY OF ALASKA FAIRBANKS
Student Learning Outcomes Assessment
Fire Science Program
2024-2025

Expanded Statement of Institutional Purpose	Intended Objectives/Outcomes	Assessment Criteria and Procedures	Implementation (what, when, who)
MISSION STATEMENT: The Fire Science program provides students with vocational, technical, career training and education that is responsive to the need of community fire departments and other related fields of emergency services. **GOAL STATEMENT:** *To make students the most attractive candidates for job openings and promotions within the Emergency Services and related fields. * Provide a unique learning environment where students can obtain a combination of high quality classroom education, hands-on training, and practical vocational experience through numerous fire and rescue organizations. * Be responsive to the needs of communities, industry and government throughout Alaska, Canada and the United States.	1. Students who complete an A.A.S. Degree in Fire Science will possess the skills and basic working knowledge of the diverse aspects of municipal fire, wildland fire, emergency medical services and/or hazardous materials control to become the most attractive candidates for entry level positions and promotions within emergency services and related fields.	1a. Graduates will secure employment in emergency services or a closely related field or go on for additional education, training, or experience within one year. 1b. Students will satisfactorily complete the State of Alaska/International Fire Service Accreditation Congress certification in one or more of the following: Firefighter I Firefighter II Rapid Intervention Technician Or The National Wildfire Coordinating Group (NWCG) standardized testing. 1c. Students will demonstrate knowledge of the Incident Command System (ICS) through standardized testing in relevant courses	1a. Administration and analysis of the results of the Outcome Assessment Graduate Questionnaire demographics will be conducted by the Program Head or designee who will disseminate results to the Fire Science faculty on an annual basis. 1b. State of Alaska test results will be collected and reviewed by the Program Head on an annual basis. Or NWCG test results will be collected by instructors and submitted to the Program Head 1c. Instructors will collect ICS test results in selected courses and submit results to Program Head.
	2. Students will satisfy employer expectations in communication, critical thinking, computation, human relations, vocational experience, physical fitness, and manipulative skills necessary for professionals in emergency services or closely related fields.	2. A survey will be conducted with graduates to determine if they have secured employment in emergency services or utilized their education to pursue additional education.	2. Survey results will be reviewed on an annual basis by the Program Head.

	3. FIRE F220 Firefighter Safety, Health and Survival is a capstone class for students to related their life, work and school experience with the 16 Firefighter Life Safety Initiatives.	3. Students will be assigned homework on each initiative and the course final will have questions designed to assess comprehension of the 16 Firefighter Life Safety Initiatives.	3. Instruction will collect and assess student assignments for comprehension of the Firefighter Life Safety Initiatives and how they relate to self-improvement and change in the fire service.
	3. Students will meet expected outcomes in communications, computation, and human relations as listed in the core curriculum.	3. Student outcomes provided by core curriculum faculty in ENGL 111X, ENGL 211X or 213X, COMM 131/141X, DEVM 105X, and ANTH or SOC 100X	3. Program Head will annually consult with listed programs every spring to verify that student outcomes meet program requirements

College or School Review Committee

The college or school committees set the tone for helping each program feel seen during this process. We have provided you with strength-based feedback tags to attach to this program review. Please select as many as applicable.

Overall Recommendations (tags)

Address Equity Gap	x	Consider Curricular Revisions	
Develop Online Offerings/Options		Improve Time to Degree	
Increase Enrollment		Increase Graduates	
Increase retention/persistence	x	Strengthen Advising Practices	
May be asked to share Effective Practices		Recommendation to University-Wide Committee	

Explanation of Overall Recommendations (narrative)

The fire science program's review highlighted significant strides in meeting its Student Learning Outcomes (SLOs), but also underscored the critical need to address persistent equity gaps. The program is addressing this gap by marketing and recruiting in underrepresented communities. The program has strategically integrated high-impact practices. Internships provide real-world experience, bridging the gap between classroom theory and practical application, particularly for students from underrepresented backgrounds who may lack prior exposure to the field. By prioritizing these experiential learning opportunities, the program aims to not only enhance students' technical skills, but also to cultivate a more diverse and inclusive cohort of future fire service professionals, ultimately strengthening community resilience. Their community partnerships provide student access to the latest apparatus and equipment while also meeting community needs for skilled firefighters. These partnerships reduce the overall cost of running the Fire Science program.

Student Learning Outcomes Feedback (tags)

Strong	x	Developing	
Requires Minor Revision		Requires Major Revision	

Student Learning Outcomes Assessment Feedback (tags)

Strong Alignment with SLOA Plan	x	Clear, Concise Presentation of Findings	x
Compelling Learning Story		Missing a Direct Measure	
Missing Active Verbs		Missing Curricular Connection	
Missing Collaboration within Department			

Student Learning Outcomes Assessment Feedback (narrative)

The Fire Science (FS) program has updated its Student Learning Outcome Assessments (SLOAs) since its last review and utilizes several direct assessment methods, including standardized industry tests. To further strengthen their assessment process, FS should consider incorporating indirect methods such as surveys and focus groups to complement the direct measures for objectives 1 and 3. Objective 2 would benefit from a direct measure, such as establishing an accepted grade for the AAS general education courses. The program's discussion of SLOA findings effectively identifies gaps in its assessment plan and explains resulting curricular changes, such as the shift from discussion boards to textbook

assignments. Future reviews should focus on how FS addresses these identified gaps and the subsequent curricular modifications implemented to improve student learning.

Student Success & Equity Feedback (narrative)

The Fire Science program has seen modest growth in student credit hours, declared majors, and degrees conferred, although student persistence has slightly declined. The program has observed that some students are working full-time before finishing their degrees. While this is a "success" in the student gaining employment, non-completers impact the program's overall success. These students should be identified and encouraged to complete the degree. Despite some non-completers, Fire Science boasts a graduate employment placement rate of 90%.

The Fire Science program has recognized equity gaps, particularly concerning gender and racial diversity, and is actively recruiting students to address these disparities. To promote the program, they are highlighting the increasing number of women enrolled. They are also collaborating with rural campuses to create wildland fire courses tailored to each campus's specific needs and partnering with Rural Student Services for recruitment and advising. Finally, the program is working to reinstate the Nanook Wildland Fire crew to create opportunities for rural firefighters.

High-Impact Practices Feedback (narrative)

Fire Science's community partnerships offer significant benefits to students. The internship program serves a dual purpose: providing staffing for local fire services while giving students valuable real-world experience and potential job opportunities. These partnerships also provide access to various apparatus, equipment and tools, reducing program costs. The FIRE 220 capstone course allows students to apply their classroom knowledge during their internships, integrating academic learning with practical experience. The capstone project offers a compelling opportunity for students to engage in deeper scholarship. Students could explore the Life Safety Initiatives during their internships, perhaps conducting presentations or surveys within their respective departments to assess their understanding of these initiatives. The program should consider a way to track non-completers. Is there a course they are not finishing? Could schedule or sequence changes help with completion? The program could also consider tying scholarships or placement opportunities with completion.

Profile Feedback

Mission-Centric to College and/or UAF	x	Unique within UA	
Collaborative with other UA Programs		Provides Job Placement for Graduates	x
Strong Post-Grad Success for Students	x	Strong Service Teaching Component	x
Strong Ties to Community or Industry	x		

Financial Feedback

High Tuition Revenues	x	High Grant Revenues	
Operates at Low Cost	x	Productive Faculty	x
Opportunities to Increase Revenue		Low Enrollment	