

# Fire Science



2020

ANNUAL REPORT OF PROGRAM DATA



UNIVERSITY of HAWAII®  
**HAWAII**  
COMMUNITY COLLEGE

## 1. Program or Unit Description

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The Fire Science Program prepares individuals with the academic knowledge for entry employment in the Fire Service field as well as meeting the needs of in-service professionals.

Upon completion of this program, students will have the knowledge to prepare for a career with federal, state, and local fire and emergency service agencies, with an emphasis on Structural Fire Fighting, Wildland Fire Suppression, Hazardous Materials Incidents, Fire Prevention and Investigation, Emergency Medical Technician, Fire Management and Administration, and Incident Command System.

After earning the Associate in Science (A.S.) Degree, students have the opportunity to pursue a Bachelor's Degree in Fire Administration from Colorado State University through distance learning.

Health and physical requirements vary with different employers in the Fire Service field, so prospective students should seek advice before enrolling.

*What is the target student or service population?*

The Fire Science program is designed to provide an educational advantage that will enhance student's opportunities for entry level positions as firefighters for federal, state and local fire service agencies.

Students also have the option to obtain a Bachelor of Science degree in Fire Administration from Eastern Oregon University via distance learning.

The program also provides in-house professionals the opportunity to obtain educational points for educational promotion points within the HFD.

I have submitted a Modification of the Fire Science program that will delete Emergency Medical Technician (EMT) courses as a requirement for the AS degree. Having EMT as a Certificate of Competence (C.O.) degree will allow individuals who want Licensure as an Emergency Medical Technician (EMT) without having to complete the FS curriculum first. This would provide EMT training for lifeguards, Park Rangers, working for American Medical Response (AMR) etc.

## 2. Analysis of the Program/Unit

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### Strengths:

- The Overall Program Health is: **Healthy**
- The FS program has the largest program enrollment with 118 majors.
- 2019-20, 40 Degrees and Certificates awarded.
- The State of Hawai'i Dept. of Health has approved HawCC as an approved EMT training facility. The Emergency Medical Technician (EMT) courses allow our students to take the National Registry Emergency Medical Technician (NREMT) exam for certification.
- Students may continue their education by enrolling at Eastern Oregon University to obtain a Bachelor of Science degree in Fire Administration.
- Successful Completion – 2019-20, 90%.

### Weaknesses:

- There is a current MOU that prohibits HawCC from teaching the Advanced Life Support (ALS) EMT courses that are required for EMT Licensure from the Dept. of Commerce and Consumer Affairs (DCCA). If KCC is unable to deliver the required ALS courses, HawCC should renegotiate the MOU that will allow HawCC to deliver the ALS courses for our students.
- Lack of identified classroom space where resources can be easily reached.
- The Fire Engine donated by the Honolulu Fire Department is parked in the open. Exposing it to the elements and is rusting.
- The ARPD has identified the FS program Efficiency as: **Cautionary**. There is currently 1 BOR approved Faculty for 118 FS majors. I don't think establishing another position will help, because we have high enrollment in the introductory fall semester classes. For this reason, we teach 2 sections for each class. However, after the first semester the enrollment drops for a variety of reasons, and then Lecturers are able to handle the load. We should look at establishing a permanent EMT instructor. It is difficult to find qualified individuals with the current pay scale.

### Perkins Indicators

- 1P1 Technical Skills Attainment - Not Met. Goal 94.75, Actual 89.29. The actual numbers are very close to the goal and can be achieved.
- 2P1 Completion - Not Met. Goal 61, Actual 50. The Fire Science program is a challenging one, which is not easy to obtain.
- 3P1 Student Retention or Transfer – Not Met. Goal 86, Actual 80. The Fire Science program is challenging, and after students enroll in the program there is a decline in enrollment when they realize what it takes to be a firefighter.
- 4P1 Student Placement – Met. Goal 66.75, Actual 91.18.

- 5P1 Nontraditional Participation – Not Met. Goal 23.75 Actual 13.46. It is difficult to attract women in the fire service. I attend a number of job fairs at local high schools and try to encourage women to enroll in the FS program. There are currently 4 women enrolled as FS majors this fall semester.
- 5P2 Nontraditional Completion – Not met. Goal 23.25, Actual 12.5. Women who are in the FS program and who apply to the Hawai`i Fire Dept. are hired almost immediately. I encourage students to complete their degree.

ARPD data table

**College: Hawai'i Community College**  
**Program: Fire Science**  
 Status: Report Complete  
**Program Quantitative Indicators**

**Overall Program Health: Healthy**

 **Workforce Alignment**

Students that successfully complete this program of study will obtain the entry level skillsets for the occupations listed on the right.

The CIP Code and occupations are clickable. Click on any of the occupations to view its profile.

Click on the CIP Code to view the cluster profile. **Workforce Alignment:** Classification of

Instructional Programs (CIP) -to- Standard Occupational Classification (SOC)

**Fire Science**

**CIP Code = [43.0203](#)**

[33-2021 - Fire Inspectors and Investigators](#)[33-2011 - Firefighters](#)[33-2022 - Forest Fire Inspectors and Prevention Specialists](#)

#	Demand Indicators	2017 - 18	2018 - 19	2019 - 20	Demand Health
1.	New & Replacement Positions (State)	158	154	154	<b>Healthy</b>
2.*	New & Replacement Positions (County Prorated)	23	24	24	
3.	Number of Majors	94	94	118	
3a.	Number of Majors Native Hawaiian	59	57	67	

2020 Hawai'i Community College ARPD  
 Program: FIRE SCIENCE

3b.	Fall Full-Time	44%	59%	59%
3c.	Fall Part-Time	56%	41%	41%
3d.	Fall Part-Time who are Full-Time in System	2%	3%	3%
3e.	Spring Full-Time	36%	41%	42%
3f.	Spring Part-Time	64%	59%	58%
3g.	Spring Part-Time who are Full-Time in System	3%	3%	1%
4.	SSH Program Majors in Program Classes	921	1,092	1,521
5.	SSH Non-Majors in Program Classes	0	62	20
6.	SSH in All Program Classes	921	1,155	1,541
7.	FTE Enrollment in Program Classes	31	38	51
8.	Total Number of Classes Taught	22	24	26

NOTE: New & Replacement jobs updated ([View Methodology](#)).



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Demand Indicators		2016 - 17	2017 - 18	2018 - 19	Demand Health
1.	New & Replacement Positions (State)	926	912	901	
*2.	New & Replacement Positions (County Prorated)	106	106	105	
3.	Number of Majors	59	55	54	
3a.	Number of Majors Native Hawaiian	20	22	22	
3b.	Fall Full-Time	45%	43%	37%	

#	Efficiency Indicators	2017 - 18	2018 - 19	2019 - 20	Efficiency Health
9.	Average Class Size	15	17	20	<b>Cautionary</b>
10.*	Fill Rate	59.5%	66%	75.7%	
11.	FTE BOR Appointed Faculty	1	1	1	
12.*	Majors to FTE BOR Appointed Faculty	94	94	118	
13.	Majors to Analytic FTE Faculty	94	94	118	
13a.	Analytic FTE Faculty	2	3	3	
14.	Overall Program Expenditures	\$106,026	\$138,941	\$149,277	
14a.	General Funded Budget Allocation	\$102,709	\$135,883	\$145,537	
14b.	Special/Federal Budget Allocation	0	0	0	
14c.	Tuition and Fees	\$3,317	\$3,058	\$3,740	
15.	Cost per SSH				
16.	Number of Low-Enrolled (<10) Classes	10	8	2	

2020 Hawai'i Community College ARPD  
 Program: FIRE SCIENCE

#	Effectiveness Indicators	2017 - 18	2018 - 19	2019 - 20	Effectiveness Health
17.	Successful Completion (Equivalent C or Higher)	90%	92%	90%	<b>Healthy</b>
18.	Withdrawals (Grade = W)	7	2	8	
19.*	Persistence Fall to Spring	76%	81%	78%	
19a.	Persistence Fall to Fall	49%	58%	58%	
20.*	Unduplicated Degrees/Certificates Awarded	23	36	40	
20a.	Degrees Awarded	13	10	17	
20b.	Certificates of Achievement Awarded	15	30	23	
20c.	Advanced Professional Certificates Awarded	0	0	0	
20d.	Other Certificates Awarded	0	0	0	
21.	External Licensing Exams Passed <sup>1</sup>				
22.	Transfers to UH 4-yr	3	0	2	
22a.	Transfers with credential from program	1	0	1	
22b.	Transfers without credential from program	2	0	1	
#	Distance Indicators	2017 - 18	2018 - 19	2019 - 20	
23.	Number of Distance Education Classes Taught	0	0	0	
24.	Enrollments Distance Education Classes	0	0	0	
25.	Fill Rate	0%	0%	0%	
26.	Successful Completion (Equivalent C or Higher)	0%	0%	0%	
27.	Withdrawals (Grade = W)	0	0	0	
28.	Persistence (Fall to Spring Not Limited to Distance Education)	0%	0%	0%	
#	Perkins Indicators	Goal	Actual	Met	
29.	1P1 Technical Skills Attainment	94.75	89.29	Not Met	
30.	2P1 Completion	61	50	Not Met	
31.	3P1 Student Retention or Transfer	86	80	Not Met	
32.	4P1 Student Placement	66.75	91.18	Met	
33.	5P1 Nontraditional Participation	23.75	13.46	Not Met	
34.	5P2 Nontraditional Completion	23.25	12.5	Not Met	
#	Performance Indicators	2017 - 18	2018 - 19	2019 - 20	
35.	Number of Degrees and Certificates	28	40	40	
36.	Number of Degrees and Certificates Native Hawaiian	16	26	30	
37.	Number of Degrees and Certificates STEM	Not STEM	Not STEM	Not STEM	
38.	Number of Pell Recipients <sup>1</sup>	14	21	16	
39.	Number of Transfers to UH 4-yr	3	0	2	

<sup>1</sup> Campus to include in program analysis if applicable.

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### 3. Program Student Learning Outcomes or Unit/Service Outcomes

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**a) List of the Program Student Learning Outcomes**

Upon successful completion, students are prepared to:

1. Meet the minimum academic training requirements of the National Fire Protection Association's (NFPA) Standard 1001, Standard for Fire Fighter Professional Qualifications (Fire Fighter I).
2. Perform as a fully qualified wildland firefighter in accordance with National Wildfire Coordinating Group PMS 310-1 standards.
3. Utilize the Incident Command System to manage a wide variety of planned and un-planned incidents.
4. Demonstrate knowledge of modern fire service strategies, tactics, and management for both structural and wildland fire incidents.
5. Meet the requirements for National Fire Protection Association's (NFPA) 472, Standard for Professional Competence of Responders to Hazardous Materials Incidents for the *Awareness* and *Operational Levels*.
6. Apply the principles of interpersonal communication, cooperative teamwork, supervision and management for leadership in the fire service.
7. Apply the theoretical principles of the chemistry of fire, and hydraulics to solve water supply problems.
8. Take the National Registry Examination for certification as an Emergency Medical Technician (EMT).

**3.b, 3.c, and 3.d:** In Fall 2019, course assessments were scheduled for Fire 101, 101L, 156 and 212. These align to the PLOs noted in the chart below. While the student artefacts and assessment data were collected by the program in F19 for these courses, the assessment reports were not able to be completed by the faculty and instructors prior to the changes that occurred across the College in March 2020 due to the Covid pandemic and the abrupt move to online instruction. The College then suspended all Spring 2020 course assessments due to Covid.

The program has kept its student data from the F19 courses and will complete these assessment reports as soon as is practicable, and will report on these assessments in next year's APR.

The closing the loop assessment for Fire 157, originally scheduled for Spring 2020, has been rescheduled to Spring 2021.

Program Learning Outcomes	1	3	4	6	7
Fire 101 Fire 101L	X	X	X	X	X
Fire 156		X	X	X	
Fire 212			X		

## 4. Action Plan

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\*The action plan may be amended based on new initiatives, updated data, or unforeseen external factors.

- I will continue to request administration to support increasing the number of EMT training hours that will allow our students to apply for EMT Licensure from the Department of Commerce and Consumer Affairs (DCCA).  
*This action will enhance student employment in high paying jobs with a good career path. This will promote Perkins Indicators 5P1 and 5P2.*
- Provide shelter for the \$250,000.00 fire engine.  
*The engine could be stored in Bldg. 386A, or have the apprentice program spend approx. \$16,000.00 for a new shelter. This is a safety issue. The brake linings have been known to corrode when left to the elements in Hawai'i. Administration needs to decide whether to protect the engine from the elements, or sell the engine.*

## 5. Resource Implications

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Detail any resource requests, including reallocation of existing resources (physical, human, financial)

- Identify adequate classroom space.
- Provide adequate funding to attract qualified EMT Lecturers for both campuses.
- Provide additional funding for supplies used for EMT training.

I am NOT requesting additional resources for my program/unit.