



**Internal Program Review
Self-Study Report**

Program Name
Fire and Rescue

Credentials Offered
AAS in Fire and Rescue 72 Credits

Self-Study Completed by:
R. Lyn Stimpson

Date Completed:
AY 2019-2020

A. Introduction

Over the past five years, students in the Fire and Rescue program have graduated with an Associate of Applied Science Degree in Fire and Rescue. The program provided applied entry-level career training for fire fighters which enhanced on-going training for current protective services professionals in Montana and the western states. Fire and Rescue courses concentrated on training in fire behavior, extinguishing agents, apparatus, tactics, rescue, and safety. Students experienced live fire situations in training mock-ups and were able to enter careers in community-based fire departments, industrial fire brigades, airport fire brigades, and wildland fire agencies. Students in this program were also required to pass a physical exam and a physical agility test.

This program has also been offered to students in Livingston and Missoula via distance learning and remote sites. The Livingston site is based at a combination fire department and conducted via distance education and travel by Helena based instructors. The Missoula site has historically been operated by a Missoula-based site coordinator and local instructors. Currently the Missoula program is conducted via distance learning and travel by Helena based instructors.

Due to high per-student costs and low completion rates a program review was conducted in the fall of 2019 to determine the efficacy and sustainability of the program. In the summer of 2020, after reviewing data (which will be included in later sections), consulting with fire industry partners, and interviews with recent graduates employed in the fire service, it was determined that this program should undergo substantial changes and transition from being offered as an AAS to an AS. The AS degree will provide students with the foundation to pursue a higher level of education with transfer credits for an advanced degree which is increasingly preferred in the fire service. Due to the fact that part of our mission is to provide education to a diverse population of students, it was also decided to develop a one year CAS as a stackable credential with the AS degree for students looking to move directly to entry-level fire service employment.

B. Alignment with Mission, Strategic Goals and Core Themes

Helena College updated the Mission, Core Themes and Strategic Goals in 2018. The previous Fire and Rescue program was in alignment with the mission of Helena College in that it was as accessible program for students that served a diverse community. The new version of the program being an Associate of Science further aligns with the mission by creating a pathway to lifelong learning and greater educational opportunities for our diverse population of students.

The strategic goals (and sub goals) are in alignment with the Fire and Rescue program as follows:

STRATEGIC GOAL #1 – PROMOTE STUDENT SUCCESS AND ACHIEVEMENT

1. Construct academic pathways for undergraduate education that enable seamless career transition or postsecondary educational transfer. – The previous AAS degree gave the students the necessary skills to enter directly into employment with the fire service industry, but did not address the growing focus on higher education in the fire service. The new AS degree pathway will enhance the career transition for our students by increasing our focusing on fire and emergency services industry certifications while also allowing students to obtain the general education core accepted for transfer throughout the Montana University System.

2. Increase educational access and support for a diverse student population through community efforts and collaboration. – The previous program had a limited number of work-based learning credits. By increasing our collaboration with local and regional fire departments and offering both a CAS option and an AS option with a greater number of required work-based learning credits, we will be serving and supporting our diverse student population. These two options allow direct entry into the fire service industry after one year or the option to continue to receive a transfer degree.

STRATEGIC GOAL #2 – ADVANCE ACADEMIC EXCELLENCE AND SCHOLARSHIP

1. Provide relevant and enriching instruction and academic programs that address the evolving job market and global community. – The redesigned program will continue to work with the local fire service industry and stay up to date regarding workforce demands and changes in this industry. Prior to the review students would sporadically receive industry recognized certifications necessary for employment in the fire and emergency services industry. Industry recognized certifications are now a primary focus of the program.

2. Utilize research and assessment data to make evidence-based decisions regarding curriculum, instruction, and programming. – As stated above, an extensive program review was completed using assessment data, industry data, and feedback from previous students now working in the fire service to identify the necessary changes to curriculum and programming in our program. As the program updates are implemented we will continue to evaluate the program on an annual basis to ensure efficacy and sustainability.

3. Demonstrate that students have learned requisite knowledge and skills relevant to their educational goals. – Assessment data was and will continued to be collected on the number of students who obtain industry recognized certifications. This is an excellent demonstration of assessment of learned requisite knowledge and skills. Helena College also meets twice yearly with industry representatives on the Advisory Board for the Fire and Rescue program and responds to their recommendations as able.

STRATEGIC GOAL #3 – BUILD COMMUNITY ENGAGEMENT AND PARTNERSHIPS

1. Foster collaborative partnerships with business, industry, and the broader community to enhance workforce development and lifelong learning. – The previous program did meet with industry via the advisory board meetings but did not have a direct connection for many students. With the work-based



learning component of the new program, Helena College will be formalizing our collaboration with additional fire departments to connect students to experiential learning.

2. Evaluate and respond to on-going and emerging community educational and workforce needs.- The program updates we are currently engaged in are a direct response to our evaluation of the emerging and on-going needs of the fire service. The re-focusing of our technical education components and the new and expanded focus on general education will better prepare our students for the workforce needs of the modern fire service.

3. Expand civic engagement opportunities through work-based learning and other real-world educational experiences. – Fire and Emergency Services AS students will now have four required and two optional work-based learning credits. In the competitive fire service hiring process formal internship or residency experience is highly valued and the updated program is designed to provide this for our students.

STRATEGIC GOAL #4 – MODEL AND FOSTER EQUITY, INCLUSION, AND CULTURAL COMPETENCY

1. Ensure that recruitment and hiring practices promote equity and inclusion. – Equity, Inclusion, and cultural competency are fundamental to the modern fire service and our program at Helena College. The diversity and language portions of the general education core that are now included in our program will also help our students understand their role in modeling and fostering a positive environment both in the firehouse and with the members of the public we serve as emergency responders.

There are required physical standards in this program, which are based on consensus fire service industry standards developed to reflect the essential job tasks inherent to the profession.

2. Develop a diversity and inclusion action plan with measurable outcomes and ongoing assessment. - This goal is part of the college-wide goal and will continue to move forward.

STRATEGIC GOAL #5 – ENSURE INSTITUTIONAL INTEGRITY

1. Maintain and enhance a transparent process for resource prioritization and allocation that fosters efficient, effective and equitable use of fiscal resources.- Through annual program review, mid-cycle program review, and five-year program review the college is able to collect data and report through a transparent process the process for allocating resources.

2. Procure and allocate resources to support the mission of Helena College. – The Fire program has been the recipient of generous donations and support from Montana fire service agencies. Over the life of the program multiple fire trucks and countless sets of fire gear have been donated with allows us to conserve our resources. Faculty and staff of the college will continue to procure and allocate resources that support this program to meet the mission of the college.

3. Devise and implement performance metrics for assessing institutional progress towards identified goals. – Helena College has recently added an assessment database to ensure institutional progress toward goals. Faculty in the Fire and Emergency Services program will be responsible for mapping of course outcomes and program outcomes to ensure this program is meeting the institutional goals and mission.

C. Alignment with Community Needs

The Fire program has been a long-standing program at Helena College that has successfully placed graduates in fire departments across Montana and the region. There are currently only two colleges in Montana, Helena College and City College, that provide fire service training, and there is a high demand for this occupation and associated occupations. The Fire and Rescue Advisory Board for Helena College has expressed concern regarding the amount of fire service personnel that are retiring and the lack of replacement staff. They have also expressed that the fire service workers are increasingly needed as all-hazard emergency responders; not just responding to fire emergencies but all emergencies. Data from 2014-2019 was collected in the table below. Currently the program has excellent student placement and is serving the community, region, and state. The new program will continue to fill these needs and more closely align with the changing needs of the fire service.

Fire and Rescue 2014-2019

Program Review Data Summary								
Alignment with Community Needs (CTE Only)								
Data Definition:	Current MT	Projected MT	Current U.S.	Projected U.S.			Program Notes	Source
A. Provide the total number of projected job openings from related occupations for Montana and U.S.	104 EMT 110 FF	558 EMT 568 FF	262,100 EMT 332,400 FF	280,800 EMT 350,000 FF			EMT Projected annual openings MT: 56 Projected annual openings US: 19,900	Montana Research & Analysis Bureau/ Bureau of Labor Statistics (2018-2028 Projections) . US DOL (2016-2016 Projections)
B. Provide percent change in job openings for related occupations for Montana and U.S.		+7.3% FF +9.7% EMT		+5.0% FF +7.0% EMT			Firefighters Projected annual openings MT: 57 Projected annual openings US: 25,.000	Montana Research & Analysis Bureau/ Bureau of Labor Statistics (2018-2028 Projections). US DOL (2016-2026 Projections)
C. Provide the median hourly wage or annual salary for related occupations	\$28,700 EMT \$50,400 FF		\$34,320 EMT \$49,620 FF				Starting Salary Range (2013-2017): \$25,112-\$37,856	Montana Research & Analysis Bureau/ Bureau of Labor Statistics (2018-2028 Projections). US DOL (2016-2026 Projections)
Data Definition:	AY1213	AY1314	AY1415	AY1516	AY1617	5 Year Ave	Program Notes	Source
D. Provide 5 years of job placement rates for all program graduates PI	79%	100%	93%	100%	100%	94%	% of graduates employed for at least 1 quarter following graduation	OCHE & Bureau of Labor Statistics

KPI or PI Denotes Items that are Core Theme Indicators for Helena College
Key Performance Indicator or Performance Indicator for Program Effectiveness under Strategic Enrollment Planning/Management

According to the Department of Labor Statistics there are currently 840 jobs for firefighters and 210 jobs for the first line supervisors of firefighting in Montana. The average wage for a career firefighter in Montana is \$51,880 and for a supervisor it is \$67,740. Nationally there are over 300,000 job openings in this occupation. (see Department of Labor data provided below https://www.bls.gov/oes/current/oes_mt.htm#31-0000)

Occupation Code	Occupation Title	Level	Employment	Employment RSE	Employment per 1,000 Jobs	Location Quotient	Median Hourly Wage	Mean Hourly Wage	Annual Mean Wage	Mean Wage RSE
33-2011	Firefighters	Detail	840	12.6%	1.799	0.81	\$25.27	\$24.94	\$51,880	4.4%
33-1021	First-Line Supervisors of Firefighting and Prevention Workers	Detail	210	16.1%	0.456	0.96	\$33.96	\$32.57	\$67,740	2.0%

D. Student Participation and Success

Over the past five years, this program has experienced decreased enrollment and completion which were the main reasons for the intense program review and revision. Course completion is high, but degree completion is low and needed to be addressed. With the new program instituting industry partnerships and decreasing adjunct faculty hours for work-based learning activities, as well as the addition of the Certificate of applied science, it is expected that we will see an increase in enrollment, retention, and completion.

Fire and Rescue 2014-19

Program Review Data Summary								
Student Participation and Success								
Data Definition:	AY1415	AY1516	AY1617	AY1718	AY1819	5 Year Ave	Program Notes	Source
A. Transfer rates to 4-year colleges (AA/AS)	N/A	N/A	N/A	N/A	N/A	N/A		Institutional Research
B. Program Capacity (Headcount)	100	100	82	100	90	94		Institutional Research
C. Annual Headcount Enrollment (Unduplicated)	47	47	31	34	33	38		Institutional Research
D. Annual FTE Enrollment PI	42	26	30	31	34	33		Institutional Research
E. Annual Program Capacity	47%	47%	38%	34%	37%	41%		Institutional Research
F. Fall to Fall Retention Rates (FT/PT students) PI	48%	45%	63%	78%	55%	58%	Fall 2014-2018 Cohorts	Institutional Research
H. Program Course Completion Rate (C- or better)	84%	79%	87%	93%	91%	87%	Fall+Spring Semester/2	Institutional Research
I. 150% Time Graduation Rate (FT/PT students)	63%	68%	24%	36%	44%	47%	Fall 2012-2016 Cohorts	Institutional Research
K. Annual Degree & Certificate Completions	15	6	12	7	13	11		Institutional Research
L. Degree Production Rates – <i>proportion of degrees/certificates granted per 100 FTE</i> PI	36	23	40	23	38	32		Institutional Research
M. Pass Rates on Occupation/industry Specific Licensing or Certification Exams (as applicable) PI								

E. Student Learning Outcomes and/or Program Goals

The previous program goals/outcomes were as follows:

Upon successful completion of this program, a student will be able to:

- Demonstrate professional conduct by displaying a positive work ethic, flexibility, team work, physical fitness, safety consciousness, and sensitivity to diversity.
- Demonstrate basic fire fighter skills in the areas of structural firefighting, wildland firefighting, aircraft rescue and firefighting, hazardous materials emergency response, and in basic emergency medical care.
- Be able to explain strategies and tactics in all types of incidents requiring fire service response, risk management, incident management, loss control, search & rescue, hydraulics, code enforcement, protection systems, and incident prevention.
- Function within the national incident management system (Incident Command System). Show basic supervisory skills, peer instruction and all types of communication methods.

New program goals/outcomes are as follows:

Upon completion of the CAS program students will be able to:

- 1) Demonstrate professional conduct by displaying a positive work ethic, flexibility, teamwork, physical fitness, safety consciousness, and sensitivity to diversity.
- 2) Demonstrate basic fire fighter skills in the areas of structural firefighting, wildland firefighting, hazardous materials, and emergency response.
- 3) Effectively communicate and interact in the workplace as well as in the community.
- 4) Be able to function at the NFPA 1001 Fire Fighter I Level

Upon completion of the AS program students will be able to:

- 1) Demonstrate professional conduct by displaying a positive work ethic, flexibility, teamwork, physical fitness, safety consciousness, and sensitivity to diversity.
- 2) Demonstrate basic fire fighter skills in the areas of structural firefighting, wildland firefighting, hazardous materials, and emergency response.
- 3) Demonstrate basic knowledge of fire protection systems, fire prevention, and technical rescue techniques.
- 4) Effectively communicate and interact in the workplace as well as in the community.
- 5) Be able to function at the NFPA 1001 Fire Fighter II Level

F. Curriculum and Instruction (Academic Programs Only)

The previous two-year AAS curriculum was as follows:

<i>Special Requirements: Successfully Passing Physical Exam, Agility Test, & Criminal Background Check</i>			
Course #	Course Title	CR	Pre - Requisites
First Semester (18 credits)			
ECP 130	Emergency Medical Technician	5	Hepatitis B Vaccines, Tuberculosis test (current or within past six months) and Criminal Background Check
FIRE 101	Intro to Fire Service	3	
FIRE 102	Intro to Fire Service II	3	Co-requisite FIRE 101
FIRE 103	Fire Fighter Safety	3	
FIRE 107	Personal Physical Fitness I	1	
M 111T or M105 or higher	Technical Math or MUS College level transferrable math course	3	
Second Semester (18 credits)			
FIRE 106	Wildland Fire Fighting	3	
FIRE 108	Personal Physical Fitness II	1	
FIRE 110	Hazardous Materials	3	
FIRE 120	Emergency Services Customer Service	2	
FIRE 180	Incident Command	2	
FIRE 125	Emergency Equipment Maintenance	2	
FIRE 131	Fire Apparatus & Hydraulics	3	
FIRE 140	Fire Fighting Tactics & Strategies	3	
Third Semester (18 credits)			
FIRE 275	Fire Service Instructor	2	
FIRE 234	Fire Protection Systems	3	
FIRE 241	Fire Inspection	3	
FIRE 242	Rescue	3	FIRE 101 and FIRE 103
FIRE 255	Fire Investigation	3	Successful completion of first year Fire & Rescue program courses.
FIRE 261	Building Construction for Fire Protection	1	
WRIT 121T	Technical Writing	3	WRIT 096 if placement score indicates such
Fourth Semester (17 credits)			
FIRE 210	Aircraft Rescue & Firefighting Basic Training (ARFF)	2	Students must be physically able to secure SCBA's, perform physically demanding tasks, and supply their own NFPA approved clothing.
FIRE 215	Fire Streams	2	FIRE 131
FIRE 225	Fire Officer	2	FIRE 120
FIRE 232	Basic Wildland Supervision	2	FIRE 106
FIRE 250	Fire Ground Operations	3	FIRE 101, 103, 131, 140
FIRE 270	Fire Prevention	2	
FIRE 288 or FIRE 289	Capstone or Fire Service Internship	2	FIRE 101 FIRE 101
COMX 106	Communicating in a Dynamic Workplace	2	

Based on the results of the intense program review it was decided that this program would be more effective and accessible with the following changes:

- Transition the two-year degree option from an AAS in Fire & Rescue to an AS in Fire and Emergency Services to improve higher education transfer options.
- Offer a one-year CAS in Fire and Emergency Services in a stackable format with the two-year AS degree to increase accessibility.
- Focus the technical portions of the program on industry recognized certifications and the nationally recognized Fire and Emergency Services Higher Education Curriculum (FESHE) to meet industry needs.

Upon final approval of the new program, Helena College will work on articulation agreements to BS and BAS degrees. The new curriculum will be as follows:

Fire and Emergency Services	Name of Course	Fire Credits	Gen Ed Credits	Total Credits
First Semester				
Fire 101	Principles of Emergency Services- Firefighter I	4		4
Fire 102	Principles of Fire and Emergency Services- Firefighter I (industry credential)	4		4
M121	College Algebra		3	3
BIOH 104 or BIOH 201	Intro to Human Biology or A&P 1 (required elective for AS but not required for CAS)		4	4
FIRE 298	Fire Service Internship (required)	2		2
Total Credits				17
Second Semester				
FIRE 110	Hazardous Materials/Rename Hazardous Materials Chemistry (industry credential)	2		2
FIRE 106	Wildland Fire Fighting (industry credential)	3		3
FIRE 131	Fire Apparatus and Hydraulics (industry credential)	4		4
COMX 115	Introduction to Interpersonal Communication (required)		3	3
WRIT 101	College Writing (required)		3	3
FIRE 298	Fire Service Internship (required)	2		2
Total Credits				17
CAS Fire and Emergency Serv./Total Credits				34

Third Semester				
FIRE 234	Fire Protection Systems	2		2
FIRE 270	Fire Prevention	2		2
BIOM 250 or BIOH 211	Microbiology for Health Sciences or A&P II (required)		4	4
PSYX 100	Intro to Psychology (required)		3	3
NASX 105	Native American Studies (D) (recommended)		3	3
SPNS 101 or Humanities Elective	Elementary Spanish I (recommended)		4	4

Total Credits				18
Fourth Semester				
Fire 201	Fire Fighter II (industry credential)	5		5
Fire 261	Building Construction for the Fire Service	2		2
PSYX 240	Abnormal Psychology (recommended)		3	3
SPNS 102 or Humanities elective	Elementary Spanish II (recommended)		4	4
FIRE 288	Capstone (required)	2		2
Total Credits				16
Total Credits AS				68

G. Faculty/Staff Profile

There is one full-time tenure track faculty overseeing this program and a number of adjunct faculty to assist with hands-on fire training and support in specialized teaching areas such as Wildland Fire Fighting.

Full time Faculty:

Lyn Stimpson, BA

- Certifications: Fire Fighter II , Fire Instructor I, Emergency Medical Technician, FAA Aircraft Rescue & Fire Fighting, Blue Card Incident Commander
- Industry Positions: Fire Chief – Montana City Fire District, President – Jefferson County Fire Council

H. Fiscal and Physical Resources

Previously this program had a high cost/student ratio due largely to the following factors:

- A dedicated Director of Fire and Rescue that did not have teaching responsibilities.
- Nearly all program instruction being conducted by adjunct faculty.
- Remote sites in Missoula and Livingston that required duplicate adjunct instructor staffing.

As of fall semester 2020 program administrative duties previously handled by the Director of Fire and Rescue have been reassigned to the Executive Director of Career and Technical Education and her administrative staff. This has allowed the reallocation of resources to support one full time faculty member with teaching responsibilities.

In the new program hand-on training activities at our remote sites will be based closely integrated with training at local combination fire departments. The fire departments will benefit by being able to offer resident volunteer fire fighters access to our degree program, and the program will benefit from integration with their existing training facilities and activities. With this balance of industry support and work-based learning experience we are expecting to see an overall decrease in expenses/student and an increase in revenue due to increased enrollment, retention, and completion. Data from 2015-2019 was collected as follows:

Fire and Rescue 2014-2019

Program Review Data Summary								
Fiscal and Physical Resources								
Data Definition: Instructional costs include program personnel and operating expenses	FY15	FY16	FY17	FY18	FY19	5 Year Ave	Program Notes	Source
A. Program Expenditure/ FTE PI	\$4,145	\$6,496	\$7,490	\$6,650	\$6,049	\$6,166		Institutional Research/ Finance
B. Average HC Program Expenditure/ FTE	\$4,919	\$5,146	\$6,827	\$6,284	\$8,252	\$6,286		Institutional Research/ Finance
C. Program Expenditure/ Completion	\$11,469	\$27,354	\$18,413	\$28,976	\$15,589	\$20,360		Institutional Research/ Finance
D. Average HC Program Expenditure/ Completion	\$17,959	\$13,493	\$16,601	\$17,005	\$13,598	\$15,731		Institutional Research/ Finance
E. Student Program Fees-Fund Balance	\$11,170	\$7,230	\$8,448	\$20,372	\$24,751	\$14,394	H60380, H60420, H60430	Institutional Research /Finance
F. Student Program Fees-Fund Expenditures	\$22,999	\$6,315	\$20,411	\$6,906	\$16,070	\$14,540	H60380, H60420, H60430	Institutional Research/ Finance
G. Total Program Expense	\$172,030	\$164,123	\$220,952	\$202,832	\$202,652	\$192,518	Personnel + Operating	Institutional Research/ Finance
H. Total Program Revenue	\$347,812	\$236,334	\$274,498	\$276,533	\$326,089	\$292,253	State Approp + Tuition	Institutional Research/ Finance
I. Program Revenue/FTE	\$8,281.24	\$9,089.77	\$9,149.93	\$8,920.42	\$9,590.85	\$9,006	Total Revenue/FTE	Institutional Research/ Finance

I. Recommendations and Preliminary Implementation Plan

A major program revision was done in academic year 2019-2020. The program was put on pause and no new students were taken in during the fall of 2020. We are currently awaiting approval for the previously described updates from the Board of Regents, NWCCU, and the Department of Education. Once we have final approval, a new cohort of students will be admitted in the fall of 2021 along with implementation of the new program curriculum. This program will also be offered at satellite locations in Frenchtown and Livingston to their resident volunteer fire fighters. Assessment will be performed after the first year and any adjustments will be made and new goals will be added in the annual plan.

J. Program Review Data Summary

See data tables in sections C, D, and H.

K. Appendix (Additional data or exhibits)- None included.