

## Program Learning Outcomes Assessment

Program: Fire Technology    Year: 2012/2013    Instructor(s): J. Brakebill, D. Faller, D. Viloría

<p style="text-align: center;"><b>PLO</b></p> <p style="text-align: center;">List specific PLO assessed.</p> <p style="text-align: center;">If more than one PLO assessment conducted for the program list each PLO and assessment in separate row of the table.</p>	<p style="text-align: center;"><b>Associated ILO</b></p> <p style="text-align: center;">Communication Skills</p> <p style="text-align: center;">Critical Thinking Skills</p> <p style="text-align: center;">Ethics</p> <p style="text-align: center;">Personal Development</p> <p style="text-align: center;">Information Competency</p>	<p style="text-align: center;"><b>Assessment Methodology</b></p> <p style="text-align: center;">List specific methodology used for assessment.</p>	<p style="text-align: center;"><b>Results of Assessment</b></p>	<p style="text-align: center;"><b>Improvement Plan</b></p> <p style="text-align: center;">Based on the assessment results are there any modifications to the program that you intend to implement?</p>
<p>Identify and describe apparatus used in the fire service and the equipment and maintenance of fire apparatus and equipment</p> <p>(Faller)</p>	<p>Critical Thinking Skills</p> <p>Information Competency</p>	<p>Students were given information through lectures and text identifying apparatus type and capability. Students were taught theoretical uses for each different type of apparatus and given examples as to why one would be used over another in different emergency situations. Written tests, group presentations, and daily discussion were the methods of evaluation used to determine competency.</p>	<p>The majority of students, approximately 75%, were able to justify the need for specific types of fire apparatus on different emergency scenes through testing and presentations.</p>	<p>The current model will continue to be used as the 25% of students that were unable to complete the requirements were limited in attendance and participation.</p>
<p>Analyze, appraise and evaluate fire and emergency incidents and identify components of emergency management and fire fighter safety</p> <p>(Faller &amp; Viloría)</p>	<p>Information Competency</p>	<p>Students are given an 8 hour state fire marshal course on confined space awareness. Students are evaluated by their ability to retain information received through lecture, video and text.</p>	<p>All students were able to complete this objective to a satisfactory manner. This is consistent with the State Fire Marshal class given throughout the State of California.</p>	<p>No modifications will be made in this portion of FIRE 010. All students have reached proficiency and the current model will continue to be followed.</p>

<p>Upon completion of the Fire Technology Program, the student will be able to identify and comprehend laws, regulations, codes and standards that influence fire department operations, and identify regulatory and advisory organizations that create and mandate them, especially in the areas of fire prevention, building codes and ordinances, and firefighter health and safety.</p> <p>(J. Brakebill)</p>	<p>Personal Development</p> <p>Information Competency</p> <p>Critical Thinking Skills</p>	<p>Students were assigned a class project to develop fire preplans for the Copper Mountain College campus in Joshua Tree, Ca. A fire preplan was developed and written for each building on campus. Each fire preplan contained the following information; building construction type, roof type, utility shut-off location, fire detection and protection systems, occupancy use, number of entrances and exits, identify possible hazards to arriving fire personnel and occupants, fire load and contents of the building, roof access locations, list of any hazardous materials, inside drawing/sketch of building indicating interior design and spaces, exterior drawing/sketch indicating location of all doors, roof hatches, utility shut-offs, nearest water supply, height and width of building, and a point of contact/building manager from Copper Mountain College.</p>	<p>10 out of 13 students (78% of the students) received 90% or better and 3 out of 13 (27% of the students) received 80% or better of the assigned points for this project and were able to demonstrate a clear understanding and identify the various components of a fire preplan. They also were able to demonstrate a clear understanding of the information required and that would be useful to responding fire agencies to mitigate a fire emergency on-campus.</p>	<p>The majority of active duty firefighters and fire technology students tend to have a better comprehension level when the information that was presented in class is followed by a course project.</p> <p>This project was directly tied to this specific SLO and all expectations were satisfactorily met.</p> <p>Next time this course is offered I will assign the same project but have the students update the Copper Mountain College fire preplans to meet current requirements.</p>
<p>Upon completion of the fire technology program, the student will identify and describe common types of building construction and conditions associated with structural collapse</p>	<p>Critical Thinking Skills</p> <p>Information Competency</p> <p>Communication Skills</p>	<p>At the beginning of the semester the students were assigned a written case study on a major fire that had occurred in the past and resulted in injuries or a loss of life. Students had to identify and discuss how the building design and construction of the building had contributed to the fire growth, building collapse, and injury or death to the fire personnel and/or the occupants</p>	<p>8 out of 13 students (62% of the students) received 90% or better, 4 out of 13 students (30% of the students) received 80% or better, and 1 out of 13 students (8% of the students) received 70% or better of the assigned points for this project and were able to demonstrate a clear understanding and identify the various types of building construction and</p>	<p>The majority of active duty firefighters and fire technology students tend to have a better comprehension level when the information that was presented in class is followed by a course project.</p> <p>This project was directly tied to this specific SLO and all expectations were satisfactorily met.</p> <p>The student who scored 70% or better on this project demonstrated</p>

<p>and firefighter safety.</p> <p>(J. Brakebill)</p>		<p>of the building. Students also had to discuss how this particular fire contributed to new fire and building codes or to the update of existing fire and building codes to prevent these types of fires and injuries occurring in the future.</p> <p>Students used the information they had learned during classroom instruction throughout the semester to prepare them to give an oral report to the class using PowerPoint presentations which included pictures of the various historic fires to accurately identify all the components of the building design and construction that may have contributed to the fire and/or deaths of the building occupants and to fire personnel.</p>	<p>design. Student's also demonstrated knowledge and a clear understanding of how building construction and design can mitigate fire loss and how poorly constructed buildings can contribute to fire growth and collapse causing bodily injury and death to occupants and first responders.</p>	<p>competency in this SLO but received this grade because of poor grammar and punctuation in his written report.</p> <p>Next time this course is offered I will assign the same project because student feedback indicated their need to know building construction as it relates to the fire service and firefighter safety.</p>
<p>Calculate flow requirements for fire apparatus, diagram a pump and plumbing schematic for fire apparatus, and apply mathematic formulae to hydraulics problems.</p> <p>(D. Faller)</p>	<p>Critical Thinking Skills</p>	<p>Students were given group projects to present models demonstrating the principles of friction loss, principles of pressure, and different types of pressure.</p> <p>Students also applied math on a daily basis to calculate engine pressure and friction loss in hose layouts.</p>	<p>All students with a grade of "C" or better met the SLO expectation. Those that did not receive a grade letter of at least a "C" did not meet the SLO objectives.</p>	<p>Students all made great strides in their ability to calculate hydraulic pressures. The biggest shortfall was their ability to perform basic math functions from the beginning. Many of the students had poor math skills to start, and every effort was taken to give them practice in those areas in order to prepare them for more complicated scenarios later in the course.</p> <p>I do believe that basic math should be a prerequisite for the course. I would recommend changing MATH 50 from an advisory to a prerequisite.</p>

<p>Analyze the causes of fire, determine extinguishing agents and methods; differentiate the stages of the fire and fire development, and compare methods of heat transfer.</p> <p>(J. Brakebill)</p>	<p>Critical Thinking Skills Communication Skills</p>	<p>Students were assigned a research paper on a major fire that had occurred in the past that had impacted the fire service today. The research paper required the students to analyze the cause of the fire, fire behavior characteristics, tactics used to extinguish the fire, lessons learned, and how the fire has impacted fire-ground tactics used today.</p> <p>Students were required to submit their research in written report form using a bibliography citing their research. Students were also required to present an oral presentation to the class using visual aids.</p>	<p>All students enrolled in the course successfully completed their research project. Students successfully demonstrated both written and orally a thorough understanding of fire behavior utilizing the material they had learned in class.</p> <p>Students scored 85% or better on their research assignment and successfully met the SLO for this course.</p>	<p>Students were able to learn and apply their knowledge in a way that made sense to them.</p> <p>Keeping students engaged in the learning process enables them to apply what they have learned in class to real life situations.</p>
<p>Demonstrate the ability to analyze, appraise and evaluate fire and emergency incidents and identify components of emergency management and fire fighter safety including: Size-up, report on conditions, Incident Command System; RECEO; 10 Standard Firefighting Orders; 18 Situations that Shout "Watch Out;" and common factors associated with injuries and line of duty deaths.</p>	<p>Critical Thinking Personal Development Communication Skills</p>	<p>At the beginning of the course the students were given an on-line assignment through the Homeland Security/NIMS website to complete the ICS 100 &amp; 200 course which is a general overview of the Incident Command System. Mid semester students were given an assignment to develop an Incident Management System utilizing the components of the Incident Command System for the Boston Marathon Bombing Incident and the West, Texas Fertilizer Plant Explosion Incident and then present their ICS organizational charts to the class justifying all positions that were activated to mitigate this emergency. Students received all instruction and training to conduct this activity as the initial Incident Commander from class</p>	<p>16 students participated in this assessment and received their certification from the Department of Homeland Security and the National Wildfire Coordinating Group for successfully completing the requirements for ICS 100 and 200.</p> <p>All 16 students identified and were able to justify the activation of the Command Staff and General Staff positions.</p> <p>13 out of 16 students were able to describe the various Divisions &amp; Groups needed in the Operations Section, and were able to identify and activate the required Units in the Planning Section.</p> <p>However 10 out of 16 described in more detail and activated either</p>	<p>The majority of active duty firefighters and fire technology students tend to have a better comprehension level when the information that was presented in class is followed by manipulative hands-on skills/drills. To enhance learning in this course I assigned recent events that were in the news and formed the class into two groups to prepare a case study of each event.</p> <p>Positive comments were received by all students who commented they felt being able to tie the information they learned in class to a case study format of recent events made the assignment enjoyable, beneficial, and easy to learn.</p>

(J. Brakebill)		assignments, lecture, group table top exercises, and videos. This SLO is measured by their class presentation on their design of their ICS organizational chart	the Service and/or the Support Branch in the Logistics Section and identified at least one Unit to activate under the Finance Section. Course content and testing met the requirements in 29 CFR 1910.120(q).	
----------------	--	---	---	--