Central Washington University
Assessment of Student Learning
Safety and Health Management Program Report 2011-2012

Please enter the appropriate information concerning your student learning assessment activities for this year.

Academic Year of Report: 2011-2012
College: College of Education and Professional Studies
Department: Engineering Technologies, Safety, and Construction Department
Program: B.S. in Safety and Health Management Program

1. What student learning outcomes were assessed this year, and why?

There was no individual course assessment activities performed in the last three years. This is primarily due to faculty turnover issues within the SHM program. The SHM program hired a new program coordinator who started fall 2011.

One of the major goals of the coordinator is to develop and implement a course assessment plan. The goal was met and the new coordinator has developed a detailed course assessment plan which is expected to be implemented starting academic year 2013-2014. The assessment plan includes an (1) program educational objectives and (2) program outcomes. The assessment plan is presented in Appendix A & B.

However, four program assessments were made in the academic year 2011-2012: (1) Alumni survey, (2) Senior exit survey, (3) SHM Industry Advisory Council Curriculum Review, and (4) Internship supervisor survey.

The goal of the SHM program is to get accredited by the Applied Science Accreditation Commission (ASAC) of ABET by 2016. Hence, the program outcomes for the SHM program has been written to match the requirements of ASAC based on the 2012-2013 Accreditation cycle. The SHM program will use the program criteria that apply to safety, occupational safety, industrial safety, and similarly named applied science programs.

According to ASAC Accreditation Criteria 2012/13, General Criterion 3: Student Outcomes

Baccalaureate degree programs must demonstrate that graduates have:

a) an ability to apply knowledge of mathematics, science, and applied sciences
b) an ability to design and conduct experiments, as well as to analyze and interpret data
c) an ability to formulate or design a system, process, or program to meet desired needs
d) an ability to function on multidisciplinary teams
e) an ability to identify and solve applied science problems
f) an understanding of professional and ethical responsibility
g) an ability to communicate effectively
h) the broad education necessary to understand the impact of solutions in a global and societal context
i) a recognition of the need for and an ability to engage in life-long learning
j) a knowledge of contemporary issues

k) an ability to use the techniques, skills, and modern scientific and technical tools necessary for professional practice.

According to ASAC Accreditation Criteria 2012/13, program criteria for safety, occupational safety, industrial safety, and similarly named applied science programs.

Program graduates must possess the necessary knowledge and skills to competently and ethically implement and practice applicable scientific, technical and regulatory aspects of the safety, health, and environmental profession. In addition, the program must demonstrate that graduates can apply college algebra, statistics, chemistry, physics, and human physiology/biology as it pertains to the practice of the safety, health, and environmental discipline. More specifically, graduates must be able to:

1. anticipate, recognize, evaluate, and develop control strategies for hazardous conditions and work practices;
2. demonstrate the application of business and risk management concepts;
3. demonstrate an understanding of the fundamental aspects of safety, industrial hygiene, environmental science, fire science, hazardous materials, emergency management, ergonomics and/or human factors;
4. design and evaluate safety, health, and/or environmental programs;
5. apply adult learning theory to safety training methodology;
6. identify and apply applicable standards, regulations, and codes;
7. conduct accident investigations and analyses;
8. apply principles of safety and health in a non-academic setting through an intern, cooperative, or supervised experience.

2. How were they assessed?

A) What methods were used? B) Who was assessed? C) When was it assessed?

The assessment methods, who to assess, and the timings are all presented in the assessment plan presented in Appendix A and B.

3. **What was learned?**

The goal of the program is to obtain course assessment data starting academic year 2013-2014.

However, the following sections presents lessons learned from the four SHM program assessments performed during the academic year 2011-2012: (1) Alumni survey, (2) Senior exit survey, (3) SHM Industry Advisory Council Curriculum Review, and (4) Internship supervisor survey.

Alumni Survey

The SHM program has been highly impacted due to faculty turnover and lack of rigor during the past years. As part of rebuilding, the program sought feedback from the alumni 2008 to 2011. The survey instrument used for this assessment was from 2007 alumni survey. The results to the close-ended question, “how well the SHM program prepared them in the following areas of competencies,” are posted in Table 1. It was evident that the SHM program only somewhat prepared them in 80% of the competencies. This information was used to correct the deficiencies and develop the new SHM curriculum that is proposed to CWU and will become effective in fall 2013.

Table 1. How well did the SHM program prepare you for each of these competencies?
(1 – Not prepared at all; 2 – Not prepared; 3- Somewhat prepared; 4 - Prepared to 5 – Very prepared)

Outcomes	Mean
Thinking critically	3.06
Communication	3.33
Quantitative reasoning	3.06
Information literacy	3.06
Apply knowledge of math, science, and applied sciences.	3.19
Design and conduct experiments; analyze and interpret data.	2.94
Formulate a system, process, or program to meet desired needs.	2.81
Able to function on multidisciplinary teams.	3.38
Identify and solve applied science problems.	3.25
Apply professional and ethical responsibility to work.	3.88
Have the broad education necessary to understand the impact of solutions in a global /societal context.	3.19
Recognize the need for and have an ability to engage in life-long learning.	4.00
Able to apply your knowledge of contemporary issues of safety and health management to your work.	3.63
Use the techniques, skills, and modern scientific and technical tools necessary for professional practice.	3.00
Able to anticipate, recognize, and evaluate hazardous conditions and practice affecting people, property, and the environment.	3.38
Able to develop and evaluate appropriate strategies designed to mitigate risk.	3.25
Apply principle of safety and health in a non-academic setting through an intern, cooperative, or supervised experience.	3.69

In addition to the close-ended question to assess graduate competencies, an open-ended question solicited information on ways to improve the SHM program. The comment and response are listed below:

- *Comment#1: "I feel there should be more of an emphasis on industrial hygiene. I also think that they should make more of an attempt to have students come out of the program with either the CHST or OHST. This would be extremely valuable to their professional careers."*

  The new curriculum will place more emphasis on industrial hygiene by improving the SHM 471 – Fundamentals of IH, introducing new courses SHM 472 – Ergonomics, and SHM 480 – SHM Lab. Unfortunately; the certifications can only be obtained with few years of professional experience and is not feasible for fresh graduates.

- *Comment#2: "Better professors"*

  Both the faculty during the time period assessed by the alumni survey is no longer with CWU. The SHM program is led by a new faculty with professional experience. Furthermore, the program is conducting a search for another faculty with professional experience.

- *Comment#3: "There need to be more classes that are deal directly with rules and regulations and how to find them. Also more about claims management, EMR and how those types of things affect a company."*

  This deficiency will be addressed by the new curriculum.

- *Comment#4: "More field safety exposure. The best education for a safety professional (in my opinion) is a variety of field observation/exposure with their mentor and/or peers."*

  This deficiency will be addressed by the new curriculum by increased the SHM 490 credits to 6 and including field trips throughout the program.

- *Comment#5:"Teach students based on real world practices than standardized. Hands-on experiences beyond internships." "More hands on/industry specific learning"*
  This deficiency will be addressed by the new curriculum, new lab course for the first time in the SHM history SHM 480.
- *Comment#6: "1 year classes should be broader to encompass the Health and Safety Application worldwide. There should be a increased emphasis on Environmental responsibilities (CESSWI, SWPPP, LEAD/ASBESTOS permitting and registering etc.)"*
  This deficiency will be addressed by the new curriculum.

Senior exit survey

On May 23, 2012, Dr. Bill Bender, Associate Dean for the CEPS conducted a senior exit interview of the seniors in the SHM program. There were approximately 25 students in attendance. This was an open-ended discussion type survey. Some of the comments and response from the SHM program are below.

- *Comment#1: "Students requested more hands on labs"*
  As part of the new Hogue building, the SHM program has a dedicated lab space for the first time in 37 years. The program has purchased several lab equipment and will be used to provide hands-on training to the students.
- *Comment#2: "Students were not happy with one faculty's classroom delivery, teaching, professionalism, and work ethics."*
  The faculty in question is no longer with CWU. A new faculty search is in progress to fill his spot.
- *Comment#3: "Students feel the curriculum needs revision and better structure AND make the program more rigorous."*
  This deficiency will be addressed by the new curriculum.

SHM Industry Advisory Council Curriculum Review

The council recommended a new curriculum, and their recommendations are presented below included in the new curriculum proposal.

> "The proposed curriculum is the result of the joint efforts of the SHM program's faculty and the Industry Advisory Council Curriculum Committee (IACCC). The IACCC consisted of six active industry professionals with over 100 years of safety and health professional experience. The committee's recommendations will help the proposed SHM curriculum to: (1) meet contemporary employment practice involved in the safety and health profession, (2) meet the standards established by the national accrediting organization for the program – ABET, and (3) meet or exceed safety programs of similar content and size offered at comparable institutions of higher education (three of the most recognized accredited "Safety" Programs were used for comparison). The below table summarizes some of our major recommendations and compares it to the three criterion to meet CWU requirements."

Table 2. IACCC Recommendations for a new SHM curriculum

No	Major Recommendations	Industry Practice/ Employability	ABET	Comparable program
1	Increase the SHM 490 Cooperative education credit requirement from three to six credits, allowing a minimum six week supervised field experience.	X	X	X
2	Add a basic physics course to the curriculum.		X	X
3	Add one Health Education Course. The committee recommends that one of the HED courses will add value, especially in one	X		

	understanding of Drugs in the workplace, and worker's compensation claims management.			
4	Require both "writing" (ADMG 385) and "speaking" (COM 345) courses as part of the curriculum. Graduates should have both report writing and speaking requirements and not providing an option to avoid the speaking course.	X	X	X
5	Add a fundamental SHM course and make it the gateway course to the SHM program.	X	X	X
6	Include a stand-alone statistics course in addition to MATH 130.	X	X	X
7	Include a project management course in the curriculum. The committee felt that the basics of Project Management are a skill set that is required for the profession	X		
8	Include the legal aspects of business course (BUS 241).	X		X
9	Remove the minor requirement from the curriculum to ensure the total number of SHM program credits stay at or below the current curriculum credits. The advisory council voted that the minor did not increase the employability of the graduates and can be removed.	X		X

Internship supervisor survey

The SHM program requires a mandatory 3 credit cooperative education under an industry supervisor. The supervisors provide an evaluation of the students under various categories (rated from 1 to 5, 5 being excellent and 1 being poor). The results are presented in Table 3. Overall the results were positive.

Table 3. SHM 490 Supervisor Evaluation (summer 2012, N=19)

Poor (1); Marginal (2); Average (3); Good (4); Excellent (5)

Productivity	4.7
Attitude	4.8
Preparedness	4.6
Dependability	4.8
Quality	4.7
Creativity/Problem Solving	4.4
Initiative	4.6
Communication	4.4
Professionalism	4.4
Interpersonal	4.6
Overall	4.6

4. What will the department or program do as a result of that information?

Based on data obtained during the 2011-2012 appropriate changes have been made to the program in the form of a new curriculum to be effective fall 2013.

5. What did the department or program do in response to last year's assessment information?

Based on data obtained during the 2011-2012 appropriate changes have been made to the program in the form of a new curriculum to be effective fall 2013.

6. Questions or suggestions concerning Assessment of Student Learning at Central Washington University:

Unable to complete at this time.