

Safety Management Program Assessment

Drawing from the university's mission, the program mission, the needs of our constituents, and the Applied Science Accreditation Commission Criteria of ABET, the following educational objectives were developed for the Bachelor of Science program in Safety Management. In addition to addressing ABET specific criteria, the Safety Management program is currently accredited by ATMAE.

1. PROGRAM EDUCATIONAL OBJECTIVES

A. Mission Statement

ISU Mission Statement. Indiana State University combines a tradition of strong undergraduate and graduate education with a focus on community and public service. We integrate teaching, research, and creative activity in an engaging, challenging, and supportive learning environment to prepare productive citizens for Indiana and the world.

ISU Vision Statement. Inspired by a shared commitment to improving our communities, Indiana State University will be known nationally for academic, cultural, and research opportunities designed to ensure the success of its people and their work.

Values statement.

Indiana Integrity

We demonstrate integrity through honesty, civility, and fairness.

State Scholarship

We value high standards for learning, teaching and inquiry.

T Transforming

We foster personal growth within an environment in which every individual matters.

R Responsibility

We uphold the responsibility of university citizenship.

E Education

We provide a well-rounded education that integrates professional preparation and study in the arts and sciences with co-curricular involvement.

E Embrace Diversity

We embrace the diversity of individuals, ideas, and expressions.

S Stewardship

We exercise stewardship of our global community.

The mission and values statement are published at the following URL:

<http://www.indstate.edu/whyisu/>

College of Technology Mission

The College of Technology will provide exemplary undergraduate and graduate programs, generate solutions and knowledge through research, and serve the technology needs of the State, the nation, and the international community.

The COT mission statement is also published in the +university catalog and on-line at <http://technology.indstate.edu/about/values.htm>

B. Program Educational Objectives

Graduates of the Safety Management program are expected to demonstrate a broad variety of competencies as they enter the workforce and advance their professional careers.

PEO 1. Communication competency—graduates demonstrate effective interpersonal communication skills, both oral and written, at all levels of their respective organizations.

PEO 2. Technical competency—graduates have a broad understanding of safety regulations and the application of engineering, administrative, and personal protective equipment controls for reducing or eliminating hazard exposures.

PEO 3. Resource accessibility—graduates locate pertinent current information concerning safety standards and hazard control methods.

PEO 4. Lifelong learning competency—graduates continue to learn and improve in their field through pursuit of advanced degrees and recognized professional certifications and participation in professional organizations.

PEO 5. Responsibility competency—graduates exercise professional, ethical practices in their respective locations throughout the world.

C. Consistency of the Program Educational Objectives with the Mission of the Institution

The program's educational objectives correlate closely with the missions of the university and College of Technology. These statements share the common educational values: graduating professionally competent students who can serve both as a leader and team member under different circumstances, and understand the impact of their work both to themselves and society as a whole.

We believe our educational objectives incorporate these values:

- PEO's 1 and 2 reflect the program's commitment to providing quality undergraduate education in both technical and liberal studies.

- PEO 3 focuses on the ability of program graduates to network with peers throughout various industries to search out workable solutions to complex issues dealing with safety and health in the workplace.
- PEO 4 represents the program's commitment to graduates' long-term productivity and professional advancement.
- PEO 5 fulfills the program's contribution to society, and Indiana in particular, by advancing students' awareness on social and environmental implications of their careers.

D. Program Constituencies

We identify the following stakeholders to be the constituencies with respect to program educational objectives and student outcomes. Each group has special interests in these stated goals:

- Students of Safety Management program. The students expect to become technically competent, professionally and socially responsible individuals after earning a bachelor's degree from the program.
- Alumni. The alumni expect a continued high quality educational program as their career and reputation are associated with the quality of their alma mater.
- Faculty. The faculty are expected to fulfill their educational responsibility in leading the students in the learning process, and periodically evaluating and adjusting if necessary the teaching pedagogy pertinent to achieving the educational objectives.
- Industrial Advisory Board (IAB). This selective and highly-involved group of individuals expect to see the program yield quality graduates that meet industry needs.
- Student employers. This group expects to hire fresh employees who are technically competent, productive, self-motivated learners, team members, and have excellent communication skills.

E. Process for Review of Program Educational Objectives

The program educational objectives have evolved over several years as the program constituency has changed. For nearly 40 years the program was housed within the applied health-based college of the university, first as the School of HPER (Health, Physical Education, and Recreation), then as the School of Health and Human Performance (later the College of HHP), and finally in the College of Nursing, Health, and Human Services. In 2010, the program requested and was granted permission to explore possibilities for growth by moving to the College of Technology (COT). A new department was formed within the COT—the Department of Built Environment—and Safety Management joined the Construction Management and Interior Architecture Design programs within that department. Since moving to the COT, undergraduate enrollment in the program has increased from 72 full- and part-time students to 112 during the Fall 2014 semester.

An effort has been made to strengthen the industrial advisory board by bringing in safety professionals from across the country with a wide range of experience in various industries. Our program was originally focused only on general industry safety, but recent curricular changes to several courses have incorporated many aspects of construction safety, mining and quarrying, and agricultural safety. Internships were at one time almost exclusively within general industry (primarily manufacturing), but now include employers from construction, power utilities, and petroleum industries as well.

The makeup of our student population has changed dramatically over the last five years. What was originally heavily dominated by Indiana residents has now become a major international program with more than 50% of the students from overseas. We currently have students representing the Kingdom of Saudi Arabia (KSA), United Arab Emirates (UAE), Qatar, and South Korea. This shift in student body makeup led us to add an advisory board member who has recently returned from a three-year assignment working in Saudi Arabia on the construction of a huge aluminum production facility. His experience working with the Saudis and an international team brings insight to the program by helping faculty understand the needs of the government of KSA and the companies of that region of the world.

The program educational objectives are intended to be broad and flexible. These objectives have been developed recently to comply with ABET accreditation criteria. They will be reviewed by the faculty and industry advisory board during our Fall 2015 meeting. Any modifications to these objectives will be available for the visiting team in the fall.

2. STUDENT OUTCOMES

A. Process for the Establishment and Revision of the Student Outcomes

The process of developing and assessing student outcomes for the Safety Management program began in 2007 when the program faculty and industry advisory board created a list of seven student outcomes. The current student outcomes for the undergraduate program were established in 2009 when the Safety Management program was preparing a self-study report for 2010 ATMAE accreditation. The outcomes were defined by the faculty members and approved by the Industrial Advisory Board of the safety management program in order to comply with ATMAE's new outcome-based evaluation procedure.

The Safety Management program has used the same student outcomes criteria for ISU assessment and has made minor revisions to the assessment tool in order to provide high quality and measurable evidence for assessment since 2010.

B. Student Outcomes

The faculty of Safety Management has established seven student outcomes which are listed below and table 2-1 shows how these outcomes are mapped out into the curriculum:

Outcome 1 – Identify, describe, and classify common hazards (workplace and general)

Outcome 2 – Assess and explain risk and the different perceptions of risk by individuals and segments of the population

Outcome 3 – Prepare safety and health education and training materials

Outcome 4 – Determine the proper method of managing workforce acceptance of safety procedures, training and engineering

Outcome 5 – Select the proper collection, reporting, and summarization methods for incident reporting

Outcome 6 – Prioritize and recommend the proper action level (design, safety device, warning device, training or PPE) and control techniques for loss exposure (engineering controls, administrative control, or PPE) to prevent injuries and property losses

Outcome 7 – Gain the necessary quantitative and analytical skills to manage a safety department regarding the economic, financial, and decision making aspects of safety management

ASAC of ABET Student Outcomes¹

- 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 in 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, skill, and modern scientific and technical tools necessary for professional practice

ASSE Student Outcomes²

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 to 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 investigation and analyses
8. Apply principles of safety and health in a non-academic setting through an intern, cooperative, or supervised experience

¹ <http://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-applied-science-programs-2015-2016/>

² <http://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-applied-science-programs-2015-2016/>

Table 2-2 – Student Outcomes Map in Safety Management

	Outcome #1	Outcome #2	Outcome #3	Outcome #4	Outcome #5	Outcome #6	Outcome #7
Safety Courses	Identify, describe, and classify common hazards (workplace and general)	Assess and explain risk and the different perceptions of risk by individuals and segments of the population	Prepare safety and health education and training materials	Determine the proper method of managing workforce acceptance of safety procedures, training and engineering	Select the proper collection, reporting, and summarization methods for incident reporting	Prioritize and recommend the proper action level (design, safety device, warning device, training or PPE) and control techniques for loss exposure (engineering controls, administrative control, or PPE) to prevent injuries and property losses	Gain the necessary quantitative and analytical skills to manage a safety department regarding the economic, financial, and decision making aspects of safety management
SFTY 212	Introduced	Introduced	Introduced	Introduced	Introduced	Introduced	Introduced
SFTY 314			Introduced	Introduced	Practiced	Introduced	
SFTY 315	Assessed	Practiced	Introduced	Introduced		Practiced	Introduced
SFTY 315L	Practiced	Practiced	Introduced	Practiced		Reinforced	Practiced
SFTY 318	Practiced			Practiced	Assessed	Practiced	
SFTY 319	Practiced		Practiced	Practiced		Practiced	
SFTY 328	Practiced		Introduced	Practiced		Practiced	Introduced
SFTY 335	Assessed	Practiced	Introduced	Practiced		Practiced	Practiced
SFTY 335L	Practiced	Practiced	Introduced	Practiced		Reinforced	Practiced
SFTY 341							Practiced
SFTY 411	Reinforced	Assessed					Assessed
SFTY 416		Reinforced	Practiced	Assessed	Reinforced	Assessed	Reinforced
SFTY 423	Reinforced	Reinforced	Assessed	Practiced	Reinforced	Reinforced	
SFTY 446	Practiced					Practiced	
SFTY 460	Practiced	Practiced		Reinforced		Reinforced	Practiced
SFTY 492	Practiced	Practiced	Practiced	Practiced	Practiced	Practiced	Practiced

C. Relationship of Student Outcomes to Program Educational Objectives

Table 2-3- Relationship of Student Outcomes to Program Educational Objectives

Program Educational Objectives	Student Outcomes
PEO 1. Communication competency – graduates demonstrate effective interpersonal communication skills, both oral and written, at all levels of their respective organizations.	Outcome 2 – Assess and explain risk and the different perceptions of risk by individuals and segments of the population Outcome 3 – Prepare safety and health education and training materials Outcome 4 – Determine the proper method of managing workforce acceptance of safety procedures, training and engineering Outcome 6 – Prioritize and recommend the proper action level (design, safety device, warning device, training or PPE) and control techniques for loss exposure (engineering controls, administrative control, or PPE) to prevent injuries and property losses
PEO 2. Technical competency – graduates have a broad understanding of safety regulations and the application of engineering, administrative, and personal protective equipment controls for reducing or eliminating hazard exposures.	Outcome 1 – Identify, describe, and classify common hazards (workplace and general) Outcome 5 – Select the proper collection, reporting, and summarization methods for incident reporting Outcome 7 – Gain the necessary quantitative and analytical skills to manage a safety department regarding the economic, financial, and decision making aspects of safety management
PEO 3. Resource accessibility – graduates locate pertinent current information concerning safety standards and hazard control methods.	Outcome 2 – Assess and explain risk and the different perceptions of risk by individuals and segments of the population Outcome 4 – Determine the proper method of managing workforce acceptance of safety procedures, training and engineering
PEO 4. Lifelong Learning competency – graduates continue to learn and improve in their field through pursuit of advanced degrees and recognized professional certifications and participation in professional organizations.	Outcome 3 – Prepare safety and health education and training materials Outcome 7 – Gain the necessary quantitative and analytical skills to manage a safety department regarding the economic, financial, and decision making aspects of safety management
PEO 5. Responsibility competency – graduates exercise professional, ethical practices in their respective locations throughout the world.	Outcome 1 – Identify, describe, and classify common hazards (workplace and general) Outcome 2 – Assess and explain risk and the different perceptions of risk by individuals and segments of the population Outcome 4 – Determine the proper method of managing workforce acceptance of safety procedures, training and engineering Outcome 5 – Select the proper collection, reporting, and summarization methods for incident reporting

3. CONTINUOUS IMPROVEMENT

A. Student Outcomes

The process of developing and assessing student outcomes for the Safety Management program began in 2007 when the program faculty and industry advisory board created a list of seven student outcomes. Those outcomes were used to formulate long- and short-term goals for the program as part of the accreditation requirements for NAIT (now ATMAE). Beginning in 2011, objectives were written for each of the seven student outcomes. A three-year assessment rotation was started in 2012 and rubrics were developed to score program success for each of the objectives. Each semester, one of the student outcomes is assessed in one or more of the classes identified as strategic for that outcome. All seven outcomes have now been assessed at least once. Following the scoring of each objective's rubric, an action plan is developed to target specific strategies for continuous improvement. Comments will be inserted in this section where appropriate to analyze the effectiveness of the action plans. The program assessment model is still in its early stages and it is anticipated that student outcomes and objectives will be tweaked or added to as the assessment is now entering its second cycle.

For the purpose of this report, assessment materials for each of the seven student outcomes will be presented as follows:

- Table of Student Learning Objectives (SLO), strategies, and methods
- Evidence of student learning
- Assessment rubrics for SLOs
- Summary of assessment findings
- Action plan for continuous improvement

At the end of this section is a status report of the first outcomes that were assessed. This section will be expanded to include updates from additional outcome assessments prior to the team visit next fall.

Student Outcome #1—Identify, describe, and classify common hazards (workplace and general)

Objectives	Course #	Assessment Methods	Source and Type of Assessment	Time of Data Collection	Assessment Coordinator	Evaluation of Results
SLO 1.1 Identify common hazards in the workplace and general	212, 315, 315L, 318, 319, 328, 335, 335L, 411, 423, 460, 492	Rubric on Hazard ID and classification	SFTY 315/335 Homework	Spring 2014 Fall 2014	SM Program Coordinator	SM Program Team
SLO 1.2 Describe common hazards in the workplace and general	212, 315, 315L, 318, 319, 328, 335, 335L, 411, 423, 460, 492	Rubric on Hazard ID and classification	SFTY 315/335 Homework	Spring 2014 Fall 2014	SM Program Coordinator	SM Program Team
SLO 1.3 Classify common hazards in the workplace and general	212, 315, 315L, 318, 319, 328, 335, 335L, 411, 423, 460, 492	Rubric on Hazard ID and classification	SFTY 315/335 Homework	Spring 2014 Fall 2014	SM Program Coordinator	SM Program Team

In-class, Out-of-class Assignments and Tests for SFTY 315 and 335 (Evidence)

Based on the topics and lectures presented to students throughout the semesters, students should be able to identify common hazards in workplace, their health effects, route of exposure, as well as describing the level and severity of hazards qualitatively and quantitatively by using different methods. The students' learning is assessed based on their performance in in-class activities, assignments and discussions, and out-of-class assignments. The midterm and final exams evaluates students learning in both theoretical and problem solving aspects.

The **goal** of this assessment is to determine if the students gain the right skills and knowledge in order to be considered competent in understanding, implementing, following the safety standards and requirements by identifying, classifying, quantitatively and qualitatively describing the common hazards in general workplaces.

Multiple homework assignments, quizzes and exams are evaluated based on a rubric described below:

In Fall 2014 and Spring 2014, 19 and 28 Students were enrolled in SFTY 315 and 335 classes (2 sections of SFTY 335) and here is the evaluation result of their performance and learning outcome according to the rubric scale:

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 1.1 Identify common hazards (workplace and general)				
Identifying common chemical, physical and biological hazards in workplace.	Students fail to identify <u>any</u> common hazards in workplace. <i>Number of Students Score 1: 0 of 47</i>	Students identify <u>less</u> than half of the common hazards in workplace. <i>Number of Students Score 2: 0 of 47</i>	Students identify <u>more</u> than half of the common hazards in workplace. <i>Number of Students Score 3: 15 of 47</i>	Students successfully identify <u>all</u> common hazards in workplace. <i>Number of Students Score 4: 32 of 47</i>
Identifying the route of exposure, target organs and health effects of common hazards.	Students fail to identify <u>any</u> route of exposures, target organs and health effects of common hazards. <i>Number of Students Score 1: 0 of 47</i>	Students identify <u>less</u> than half of the route of exposures, target organs and health effects of common hazards. <i>Number of Students Score 2: 1 of 47</i>	Students identify <u>more</u> than half of the route of exposures, target organs and health effects of common hazards. <i>Number of Students Score 3: 9 of 47</i>	Students successfully identify <u>all</u> routes of exposures, target organs and health effects of common hazards. <i>Number of Students Score 4: 37 of 47</i>
Identifying possible engineering, administrative control methods as well as personal protective equipment (PPE).	Students fail to identify <u>any</u> possible engineering, administrative control methods and PPE. <i>Number of Students Score 1: 1 of 47</i>	Students identify <u>less</u> than half of the possible engineering, administrative control methods and PPE. <i>Number of Students Score 2: 1 of 47</i>	Students identify <u>more</u> than half of the possible engineering, administrative control methods and PPE. <i>Number of Students Score 3: 14 of 47</i>	Students successfully identify <u>all</u> the possible engineering, administrative control methods and PPE. <i>Number of Students Score 4: 31 of 47</i>

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 1.2 Describe common hazards (workplace and general)				
Describing hazards by using quantitative assessment methods.	Students fail to describe <u>any</u> common hazards using quantitative methods. <i>Number of Students Score 1: 3 of 47</i>	Students describe <u>less</u> than half of the common hazards using quantitative methods. <i>Number of Students Score 2: 14 of 47</i>	Students describe <u>more</u> than half of the common hazards using quantitative methods. <i>Number of Students Score 3: 22 of 47</i>	Students successfully describe <u>all</u> common hazards using quantitative methods. <i>Number of Students Score 4: 8 of 47</i>
Describing effectiveness of possible control methods (engineering, administrative and PPE) by using quantitative methods.	Students fail to describe the effectiveness of <u>any</u> control method using quantitative methods. <i>Number of Students Score 1: 3 of 47</i>	Students describe the effectiveness of <u>less</u> than half of the control methods using quantitative methods. <i>Number of Students Score 2: 14 of 47</i>	Students describe the effectiveness of <u>more</u> than half of the control methods using quantitative methods. <i>Number of Students Score 3: 22 of 47</i>	Students successfully describe the effectiveness of <u>all</u> the control methods using quantitative methods. <i>Number of Students Score 4: 8 of 47</i>

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 1.3 Classify common hazards (workplace and general)				
Classifying common chemical hazards in workplace. SFTY 315	Students fail to classify <u>any</u> common chemical hazards in workplace. <i>Number of Students Score 1: 0 of 19</i>	Students classify <u>less</u> than half of the common chemical hazards in workplace. <i>Number of Students Score 2: 3 of 19</i>	Students classify <u>more</u> than half of the common chemical hazards in workplace. <i>Number of Students Score 3: 13 of 19</i>	Students successfully classify <u>all</u> common chemical hazards in workplace. <i>Number of Students Score 4: 3 of 19</i>
Classifying common physical hazards in workplace. SFTY 335	Students fail to classify <u>any</u> common Physical hazards in workplace. <i>Number of Students Score 1: 0 of 28</i>	Students classify <u>less</u> than half of the common physical hazards in workplace. <i>Number of Students Score 2: 3 of 28</i>	Students classify <u>more</u> than half of the common physical hazards in workplace. <i>Number of Students Score 3: 23 of 28</i>	Students successfully classify <u>all</u> common physical hazards in workplace. <i>Number of Students Score 4: 2 of 28</i>
Classifying common biological hazards in workplace. SFTY 315	Students fail to classify <u>any</u> common biological hazards in workplace. <i>Number of Students Score 1: 0 of 19</i>	Students classify <u>less</u> than half of the common biological hazards in workplace. <i>Number of Students Score 2: 3 of 19</i>	Students classify <u>more</u> than half of the common biological hazards in workplace. <i>Number of Students Score 3: 13 of 19</i>	Students successfully classify <u>all</u> common biological hazards in workplace. <i>Number of Students Score 4: 3 of 19</i>

Assessment Findings for SFTY 315 and 335

Description: Based on the lectures and quantitative methods which have been discussed and practiced during the semester, students are supposed to be able to identify, describe and classify common hazards in workplace.

Goal: The goal of this assessment is to determine if the students gain the right skills and knowledge to identify, describe and classify different hazards (quantitatively and qualitatively) based on the material taught during the semester.

Target: The Target for this assessment was to determine if 75% of the students enrolled in this class have received a score of 75% or higher.

Findings: according to the assessment rubric and evidence collected during the Fall and Spring semesters of 2014, 19 students were enrolled in SFTY 315 and 28 students were enrolled in two sections of SFTY 335 and overall all students except one were able to successfully complete these courses.

At the end of the year, 15 students out of 47 (32%) scored between 50% and 75% and 32 students out of 47 (68%) scored 75% or more for criterion one under the Student Learning Objective (SLO) 1.1. The evidence on the second criterion of SLO 1.2. also shows that during the same period, one student (2%) received a score between 25% and 50% and nine students (19%) received scores between 50% and 75%, and 37 students (79%) scored 75% or more; and finally, on the third criterion of SLO 1.1., one student out of 47 (2%) scored below 25%, one student (2%) scored between 25% and 50%, 14 students (30%) had scores between 50% and 75%, and 31 of the students (66%) had scores more than 75%.

In regard to both criteria of SLO 1.2, three students (6%), 14 students (30%), 22 students (47%) out of 47 students had scores below 25%, between 25% and 50%, and between 50% and 75%, and only eight students (17%) out of 47 were able to get scores more than 75%.

By the end of the year, three students out of 19 (16%) were able to get a score between 25% and 50%; 13 students out of 19 (68%) were able to score between 50% and 75%, and only 3 students out of 19 (16%) were able to score above 75% in the first and third criteria of SLO 1.3.; while three students out of 28 (11%) scored between 25% and 50%, 23 students out of 28 scored between 50% and 75% and only 2 students out of 28 (7%) scored more than 75% in the second criterion of SLO 1.3.

Overall, only 71%, 17% and 13% of students were able to receive scores of 75% or higher in SLO 1.1, SLO 1.2. and SLO 1.3. respectively. In conclusion, the course was unsuccessful to achieve its target as described above.

Recommendations for Improvement: According to the instructor's experience and closed observation of data, there are two potential reasons for the failure to reach the target:

- Twenty students out of 47 (52.5%) in both SFTY 315 and SFTY 335 classes were international students with significantly limited English language skills, which is affecting their academic performance at a disturbing level.
- Assignments, quizzes and tests used to assess SLO 1.2. and SLO 1.3 were mainly based on quantitative methods and weak mathematical skills and background of students (domestic and international) had a significant effect on their academic performance.

Based on the comments above, it is strongly recommended to enhance and enforce the admission requirements (English Language Skills in reading, writing, listening and speaking) for international students, as well as enhance and enforce the quality of mathematics courses. Obviously both recommendations involve offices and departments outside of the Safety Management program and the Department of Built Environment.

Action Plan for program outcome 1 (SFTY 315 and 335)

Program Outcome 1 - Identify, describe, and classify common hazards (workplace and general): understanding the concept of different types of hazards, identifying hazards, and showing competency in describing (qualitatively and quantitatively) and classifying common hazards in workplace.

SLO 1.1 - Identify common hazards (workplace and general)

The following action is associated with the evidence collected for this assessment outcome from SFTY 315 and SFTY 335 classes during Fall and Spring semesters of 2014.

Action Details: The admission requirements regarding English language skills (reading, writing, listening and speaking) need to be enhanced and enforced for international students.

Implementation Plan: this action can be implemented as early as possible preferably Fall semester of 2017.

Key/Responsible Person: multiple individuals and offices need to cooperate and coordinate with one another in order to implement the recommended plan:

- Office of the Admissions
- Office of International Programs (Center for Global Engagement)
- Associate Dean of College of Technology (currently Kara Harris)
- Chair of Department of Built Environment (currently Andrew Payne)
- Instructor (currently Farman A. Moayed)

Measures: the recommendation should be added to the Safety Management program catalog and followed by all parties.

Resource Allocations: none

SLO 1.2 - Describing common hazards (workplace and general)

The following action is associated with the evidence collected for this assessment outcome from SFTY 315 and SFTY 335 classes during Fall and Spring semesters of 2014.

Action Details: the quality of mathematics courses (MATH 115) taught in the department of Mathematics in ISU needs to be enhanced. Another practical option is to change the math pre-requisite of SFTY 315 and SFTY 335 courses from college algebra to calculus level.

Implementation Plan: This action can be implemented as early as possible, preferably Fall semester of 2017.

Key/Responsible Person: multiple individuals and offices need to cooperate and coordinate with one another in order to implement the recommended plan:

- Dean or Associate Dean of College of Art and Sciences
- Chair of Department of Mathematics
- Instructors for MATH 115 classes
- Associate Dean of College of Technology (currently Kara Harris)
- Chair of Department of Built Environment (currently Andrew Payne)
- Instructor (currently Farman A. Moayed)

Measures: the minimum required MAPLE score can be raised or the math pre-requisite of SFTY 315 and SFTY 335 courses can be changed from college algebra to calculus and included in the Safety Management program as well as course description in the catalog.

Resource Allocations: none

SLO 1.3 - Classifying common hazards (workplace and general)

The following action is associated with the evidence collected for this assessment outcome from SFTY 315 and SFTY 335 classes during Fall and Spring semesters of 2014.

Action Details: The admission requirements regarding English language skills (reading, writing, listening and speaking) need to be enhanced and enforced for international students.

Implementation Plan: this action can be implemented as early as possible preferably Fall semester of 2017.

Key/Responsible Person: multiple individuals and offices need to cooperate and coordinate with one another in order to implement the recommended plan:

- Office of the Admissions
- Office of International Programs (Center for Global Engagement)
- Associate Dean of College of Technology (currently Kara Harris)
- Chair of Department of Built Environment (currently Andrew Payne)
- Instructor (currently Farman A. Moayed)

Measures: the recommendation should be added to the Safety Management program catalog and followed by all parties.

Resource Allocations: none

Student Outcome #2—Assess and explain risk and the different perception of risk by individuals and segments of the population

Objectives	Course #	Assessment Methods	Source and Type of Assessment	Time of Data Collection	Assessment Coordinator	Evaluation of Results
SLO 2.1 Assess risk as it pertains to occupational safety management	212, 315, 315L, 335, 335L, 411, 416, 423, 460, 492	Rubric on risk decision	SFTY 411 Assignment	Spring 2014	SM Program Coordinator	SM Program Team
SLO 2.2 Diagram fault trees and identify cut sets and single point failures in systems	212, 315, 315L, 335, 335L, 411, 416, 423, 460, 492	Rubric on risk decision	SFTY 411 Assignment	Spring 2014	SM Program Coordinator	SM Program Team
SLO 2.3 Explains risk for different segments of the population	212, 315, 315L, 335, 335L, 411, 416, 423, 460, 492	Rubric on risk decision	SFTY 411 Assignment	Spring 2014	SM Program Coordinator	SM Program Team

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 2.1 Assess risk as it pertains to occupational safety management				
Identify potential workplace hazards during the design phase of a project	Student fails to identify any potential hazards <i>Number of students score 1: 3 of 47</i>	Incomplete listing of potential hazards <i>Number of students score 2: 5 of 47</i>	Most hazards identified, but missing some items <i>Number of students score 3: 10 of 47</i>	Hazard list complete <i>Number of students score 4: 29 of 47</i>
Develop a Risk Assessment Matrix to prioritize identified hazards	No risk Assessment Matrix is developed <i>Number of students score 1: 0 of 47</i>	Matrix created, but with substantial deficiencies <i>Number of students score 2: 0 of 47</i>	Matrix generally complete, but with minor deficiencies <i>Number of students score 3: 0 of 47</i>	Matrix satisfactory <i>Number of students score 4: 47 of 47</i>
Create Preliminary Hazard Analysis to recommend countermeasures	No PHA submitted, or incorrect format <i>Number of students score 1: 0 of 47</i>	PHA completed with major deficiencies <i>Number of students score 2: 0 of 47</i>	PHA completed with only minor deficiencies <i>Number of students score 3: 5 of 47</i>	PHA satisfactory <i>Number of students score 4: 42 of 47</i>
Reassess hazards based on assumption that countermeasures are administered	No reassessment completed <i>Number of students score 1: 0 of 47</i>	Reassessment completed, but with major deficiencies <i>Number of students score 2: 6 of 47</i>	Reassessment completed with only minor deficiencies <i>Number of students score 3: 13 of 47</i>	Hazard reassessment satisfactory <i>Number of students score 4: 28 of 47</i>

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 2.2 Diagram Fault Trees and identify cut sets and single point failures in systems				
Design logical fault tree with appropriate use of symbols	No attempt to complete fault tree <i>Number of students score 1: 0 of 47</i>	Fault tree created, but with major flaws <i>Number of students score 2: 6 of 47</i>	Fault tree created with only minor flaws <i>Number of students score 3: 12 of 47</i>	Fault tree satisfactory <i>Number of students score 4: 29 of 47</i>
Use cut set algorithm to identify cut sets and single point failures in fault tree	No cut sets or single point failures identified <i>Number of students score 1: 0 of 47</i>	Algorithm attempted, but with major errors <i>Number of students score 2: 0 of 47</i>	Algorithm completed with minor errors <i>Number of students score 3: 0 of 47</i>	Algorithm satisfactory <i>Number of students score 4: 47 of 47</i>

SLO 2.3 Explain risk for different segments of the population

This learning objective was not assessed during the Spring 2014 semester, although a classroom presentation on risk perception and how people respond differently to similar situations was done. Students were presented with a variety of stimuli and their different reactions were discussed. An effective means for assessing this objective needs to be developed prior to the next assessment cycle for Outcome #2.

Assessment findings for SFTY 411

Description: Students are taught various System Safety models to use for identifying the root causes of workplace incidents. Specifically, students learn to use Preliminary Hazard Analysis, Failure Modes and Effect Analysis, Job Safety Analysis, Hazard Risk Assessment Matrix, and Fault Tree Analysis with small group assignments for each model. This class had an unusually high percentage (29 of 47) of international students with limited English writing skills, so an attempt was made to mix domestic and international students in each group. The format the course followed made it difficult to evaluate individual students, leading to the decision to limit enrollment to no more than 25 students in future semesters.

Goal: The goal of this assessment is to determine if the students gain the right skills to utilize system safety models to evaluate hazards in the workplace.

Target: The Target for this assessment was a minimum comprehension level of 75% by at least 75% of the students in the course.

Findings: During the Spring 2014 semester there were 47 students enrolled in SFTY 411, and ultimately all but one student achieved a passing grade for the class. Reviewing the results of the assessment rubrics for SLO 2.1 and 2.2, each of the listed objectives met the goal of 75% of students scoring 75% or higher. There is still room for improvement in several of those objectives. For instance, under SLO 2.1 the first objective that states “*Identify potential workplace hazards during the design phase of a project*”, had 8 students (17%) who failed to meet the target of 75% and 2 other objectives had 6 students failing to meet the target. Even though group assignments are encouraged for the class, smaller groups (of 2 or 3 students) would give a better reflection of individual student’s mastery of the course material. The instructor believes that without the guidance and work of the domestic students in some of the groups, many of the international students would not have attained passing grades on some of the assignments. There were a few sophomores who were allowed into the class, and it was clear that those students were not ready for a course that relies heavily on knowledge from previous courses.

Recommendations: Prerequisite requirements need to be changed and enforced for future terms in SFTY 411. Class size must be restricted to promote more individual work with the various system safety models. Many students, both domestic and international, have severe mathematics deficiency. Even though MATH 115 (College Algebra) is a prerequisite for this course, students

still struggled with basic math concepts (algebra and statistics). The math requirement for the program needs to be enhanced, possibly to include an introductory calculus course.

Action Plan for program outcome 2 (SFTY 411)

Program Outcome 2 - Assess and explain risk and the different perception of risk by individuals and segments of the population: use of common system safety models to assess risk and root cause analysis of loss events.

SLO 2.1 – Assess risk as it pertains to Occupational Safety Management

The following action is associated with the evidence collected for this assessment outcome from SFTY 411 classes during Spring semester of 2014.

Action Details: Smaller class size and smaller groups for model assignments need to be implemented to insure individual student's mastery of course material.

Implementation Plan: This action was implemented for the Fall 2014 and Spring 2015 semesters and will be continued in future terms.

Key/Responsible Person: Chair of Department of Built Environment (currently Andrew Payne)
- Instructor (currently Farman A. Moayed)

Measures: Course enrollment limit of 25 will be posted and enforced.

Resource Allocations: none

SLO 2.2-- Diagram Fault Trees and identify cut sets and single point failures in systems

The following action is associated with the evidence collected for this assessment outcome from SFTY 411 classes during Spring semester of 2014.

Action Details: Much smaller groups would lead to better individual mastery of the concepts of fault trees and similar models.

Implementation Plan: This action was implemented for the Fall 2014 and Spring 2015 semesters and will be continued in future terms.

Key/Responsible Person: Chair of Department of Built Environment (currently Andrew Payne)
- Instructor (currently Farman A. Moayed)

Measures: Course enrollment limit of 25 will be posted and enforced.

Resource Allocations: none

SLO 2.3-- Explain risk for different segments of the population

This SLO was not assessed during the Spring 2014 semester in large part due to a lack of time to complete all of the course goals.

Action Details: Smaller class size would reduce the time required for group presentations on application specific models, allowing for additional class time to cover this topic.

Implementation Plan: This action was implemented for the Fall 2014 and Spring 2015 semesters and will be continued in future terms.

Key/Responsible Person: Chair of Department of Built Environment (currently Andrew Payne)
- Instructor (currently Farman A. Moayed)

Measures: Course enrollment limit of 25 will be posted and enforced.

Resource Allocations: none

Student Outcome #3—Prepare safety and health education and training materials

Objectives	Course #	Assessment Methods	Source and Type of Assessment	Time of Data Collection	Assessment Coordinator	Evaluation of Results
SLO 3.1 Develop content-specific safety training programs	212, 314, 315, 315L, 328, 335, 335L, 416, 423, 492	Rubric on training program	SFTY 423 Homework, Quizzes, Assignments & Presentations	Fall 2012	SM Program Coordinator	SM Program Team
SLO 3.2 Demonstrate proficiency in small group presentations	212, 314, 315, 315L, 328, 335, 335L, 416, 423, 492	Rubric on training program	SFTY 423 Homework & Presentations	Fall 2012	SM Program Coordinator	ST Program Team
SLO 3.3 Develop effective written and oral presentation skills	212, 314, 315, 315L, 328, 335, 335L, 416, 423, 492	Rubric on training program	SFTY 423 Assignments & Presentations	Fall 2012	SM Program Coordinator	SM Program Team

Program Outcome #3: Prepare safety and health education and training materials

The term project assignment for SFTY 423 fall 2012 (evidence)

SFTY 423 covers the fundamental principles and concepts of the theory and application of various methods and techniques of training and communications in industrial safety. The course has been designed to improve the participants’ knowledge, skills, and understanding of the development and use of training to improve the safety performance of an organization.

In Fall 2012, 23 students were enrolled in the SFTY 423 class and here are the evaluation results of their performance and learning outcome according to the rubric scale:

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 3.1 – Develop content-specific safety training programs				
Using concepts presented in this course, students develop a complete written training plan addressing all of the steps in ADDIE training model to solve a safety problem in an organization. Document all of the steps of ADDIE in the training program design as well as to provide the training program itself	It is not possible to understand what the scope of the project is. <i>Number of Students Score 1: 7 of 23</i>	The report is not very specific and not well organized. <i>Number of Students Score 2: 3 of 23</i>	The report is specific but not organized. <i>Number of Students Score 3: 3 of 23</i>	The report is very specific and well organized. <i>Number of Students Score 4: 10 of 23</i>

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 3.2 – Demonstrate proficiency in small group presentations				
Professional small group training presentation delivered to class on specific assigned OSHA-required topics	It is not possible to understand what the scope of the project is.	The presentation is not very specific and not well organized.	The presentation is specific but not organized.	The presentation is very specific and well organized.
	<i>Number of Students Score 1: 7 of 23</i>	<i>Number of Students Score 2: 4 of 23</i>	<i>Number of Students Score 3: 3 of 23</i>	<i>Number of Students Score 4: 9 of 23</i>

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 3.3 – Develop effective written and oral presentation skills				
Provide class presentation on training program	It is not possible to understand what the scope of the project is.	The presentation is not very specific and not well organized.	The presentation is specific but not organized.	The presentation is very specific and well organized.
	<i>Number of Students Score 1: 7 of 23</i>	<i>Number of Students Score 2: 3 of 23</i>	<i>Number of Students Score 3: 3 of 23</i>	<i>Number of Students Score 4: 10 of 23</i>

Assessment Findings for Outcome #3 (SFTY 423)

Description: Students are assigned to small groups of 3-4 and tasked with developing, writing, and presenting a comprehensive training program for some aspect of safety.

Goal: The goal of this assessment is to determine if the students gain the right skills and knowledge to deliver effective training programs suitable for presentation in a variety of workplaces.

Target: The Target for this assessment was to determine if 75% of the students enrolled in this class have received a score of 75% or higher.

Findings: according to the assessment rubric and evidence collected during the Fall semester of 2012, 23 students completed this course. Serious deficiencies exist with each of the SLO's. Seven students (30.4%) were scored at the bottom rating (25%) of the rubric in all 3 SLO's. There were 3 additional students (13.0%) scored 50% on SLO's #3.1 and 3.3 and 4 students (17.4%) scored 50% on SLO #3.2. Thus, a total of 47.8% of the class failed to achieve the target of 75% on all SLO's.

The average grade for all SLO's was 66.7%. Hence, in conclusion, this course was not successful in achieving its target as mentioned above.

Recommendations for Improvement: It was noted by the instructor that all of the individuals with substandard scores were international students. With the high percentage of international students enrolled in the Safety Management program, focus needs to be on communication skills. Students need more exposure to public speaking and presentation delivery in several classes prior to entering their senior year. Opportunities for student presentations will be incorporated into lower level SFTY classes beginning immediately.

Action Plan for program outcome 3 (SFTY 423)

Program Outcome 3 – Prepare Safety and Health Training Materials

SLO 3.1 – Develop content-specific safety training programs

The following action is associated with the evidence collected for this assessment outcome from SFTY 423 class during Fall semester 2012.

Action Details: The students will be required to complete SFTY 212, 314, 315, 318, 319, 328, and 335 prior to registering in SFTY 423 class or concurrent with it. Opportunities for student oral presentations will be incorporated into many of these listed courses.

Implementation Plan: this action can be implemented as early as Fall semester of 2013.

Key/Responsible Person: Instructor (currently Mike Williamson)

Measures: within five years the recommendation will be added to the course catalog and followed by all students

Resource Allocations: none

SLO 3.2 – Demonstrate proficiency in small group presentations

The following action is associated with the evidence collected for this assessment outcome from SFTY 423 class during Fall semester 2012.

Action Details: The students will be required to complete SFTY 212, 314, 315, 318, 319, 328, and 335 prior to registering in SFTY 423 class or concurrent with it. Students who struggle with oral presentations will be required to seek assistance from university student services.

Implementation Plan: this action can be implemented as early as Fall semester of 2013.

Key/Responsible Person: Instructor (currently Mike Williamson)

Measures: within five years the recommendation will be added to the course catalog and followed by all students

Resource Allocations: none

SLO 3.3 – Develop effective written and oral presentation skills

The following action is associated with the evidence collected for this assessment outcome from SFTY 423 class during Fall semester 2012.

Action Details: The students will be required to complete SFTY 212, 314, 315, 318, 319, 328, and 335 prior to registering in SFTY 423 class or concurrent with it. Any student with a grade below “C” in any of the following classes will be required to show evidence of additional tutoring or instruction in written English and public speaking: ENG 101, ENG 105, ESL 103A, ESL 103B, ENG 305, ENG 305T, COMM 101

Implementation Plan: this action can be implemented as early as Fall semester of 2013.

Key/Responsible Person: Instructor (currently Mike Williamson)

Measures: within five years the recommendation will be added to the course catalog and followed by all students

Resource Allocations: none

Student Outcome #4—Determine the proper method of managing workforce acceptance of safety procedures, training, and engineering

Objectives	Course #	Assessment Methods	Source and Type of Assessment	Time of Data Collection	Assessment Coordinator	Evaluation of Results
SLO 4.1 Apply principles of engineering to workplace hazard resolution	212, 314, 315, 315L, 318, 319, 328, 335, 335L, 416, 423, 460, 492	Rubric on industrial partnership project	SFTY 416 Assignments	Spring 2013	SM Program Coordinator	SM Program Team
SLO 4.2 Develop administrative controls for workplace hazard resolution	212, 314, 315, 315L, 318, 319, 328, 335, 335L, 416, 423, 460, 492	Rubric on industrial partnership project	SFTY 416 Assignments	Spring 2013	SM Program Coordinator	SM Program Team
SLO 4.3 Select appropriate personal protective equipment when engineering or administrative controls are inadequate	212, 314, 315, 315L, 318, 319, 328, 335, 335L, 416, 423, 460, 492	Rubric on industrial partnership project	SFTY 416 Assignments	Spring 2013	SM Program Coordinator	SM Program Team
SLO 4.4 Develop written training programs to educate workers in the use of engineering, administrative and PPE controls	212, 314, 315, 315L, 318, 319, 328, 335, 335L, 416, 423, 460, 492	Rubric on industrial partnership project	SFTY 416 Assignments	Spring 2013	SM Program Coordinator	SM Program Team

Program Outcome #4: Determine the proper method of managing workforce acceptance of safety procedures, training, and engineering

The term project assignment for SFTY 416 spring 2013 (evidence)

SFTY 416 is a course aimed at developing individual leadership and organizational processes that will help prepare students for a career in Safety Management. Experiential learning has proven to be effective in education and this course will be based totally on concepts utilizing experiential processes. Students must be seniors who have completed a majority of their major courses. The final project for each student will be to evaluate and/or develop a model Safety Management program for an employer.

In Spring 2013, 32 students were enrolled in the SFTY 416 class and here are the evaluation results of their performance and learning outcome according to the rubric scale:

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 4.1 – Apply principles of engineering to workplace hazard resolution				
No learning activity or assessment provided in this learning objective (Yet to be assessed)	It is not possible to understand what the scope of the project is. <i>Number of Students Score 1: N/A</i>	The report is not very specific and not well organized. <i>Number of Students Score 2: N/A</i>	The report is specific but not organized. <i>Number of Students Score 3: N/A</i>	The report is very specific and well organized. <i>Number of Students Score 4: N/A</i>

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 4.2 – Develop administrative controls for workplace hazard resolution				
Provide written team proposal for developing an exemplary safety management system that would qualify for certification as a VPP Star Worksite.	It is not possible to understand what the scope of the project is.	The report is not very specific and not well organized.	The report is specific but not organized.	The report is very specific and well organized.
	<i>Number of Students Score 1: 0 of 32</i>	<i>Number of Students Score 2: 0 of 32</i>	<i>Number of Students Score 3: 4 of 32</i>	<i>Number of Students Score 4: 28 of 32</i>

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 4.3 – Select appropriate personal protective equipment when engineering or administrative controls are inadequate				
No learning activity or assessment provided in this learning objective	It is not possible to understand what the scope of the project is.	The report is not very specific and not well organized.	The report is specific but not organized.	The report is very specific and well organized.
(Yet to be assessed)	<i>Number of Students Score 1: N/A</i>	<i>Number of Students Score 2: N/A</i>	<i>Number of Students Score 3: N/a</i>	<i>Number of Students Score 4: N/A</i>

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 4.4 – Develop written training programs to educate workers in the use of engineering administrative and PPE controls				
Develop and deliver a training program in class presentation on process for creating a safety management system that produces excellent results	It is not possible to understand what the scope of the project is.	The report is not very specific and not well organized.	The report is specific but not organized.	The report is very specific and well organized.
	<i>Number of Students Score 1: 2 of 34</i>	<i>Number of Students Score 2: 0 of 34</i>	<i>Number of Students Score 3: 6 of 34</i>	<i>Number of Students Score 4: 24 of 32</i>

Assessment Findings for Outcome #4 (SFTY 416)

Description: Students work in small groups with assigned industry partners to develop administrative plans for implementing an effective safety and health program within that particular business. The project requires knowledge of OSHA standards, monitoring techniques, corporate mission and goals, and teamwork.

Goal: The goal of this assessment is to determine if the students gain the right skills and knowledge to develop comprehensive plans for administration of corporate safety policies and procedures.

Target: The Target for this assessment was to determine if 75% of the students enrolled in this class have received a score of 75% or higher.

Findings: according to the assessment rubric and evidence collected during the Spring semester of 2013, 32 students completed this course. At the end of the semester all but 2 of the students scored 75% or more in Student Learning Objective (SLO) 4.2 and SLO 4.4. It was determined that the current course format does not include activities suitable for assessment for SLO 4.1 and 4.3.

The average grade for all criteria under SLO 4.2 and 4.4 were 93%. Hence, in conclusion, this course was successful to achieve its target as mentioned above.

Recommendations for Improvement: the instructor will incorporate course materials designed to build competence under SLO 4.1 and 4.3. These are skills that students should have acquired prior to enrolling in SFTY 416, but since the course is used as a senior capstone for the program, it is essential that mastery of these skills is demonstrated.

Action Plan for program outcome 4 (SFTY 416)

Program Outcome 4 – Determine the proper method of managing workplace acceptance of safety procedures, training, and engineering

SLO 4.1 – Apply principles of engineering to workplace hazard resolution

The following action is associated with the evidence collected for this assessment outcome from SFTY 416 class during Spring semester 2013.

Action Details: The students will be required to complete SFTY 212, 314, 315, 318, 319, 328, and 335 prior to registering in SFTY 416 class or concurrent with it.

Implementation Plan: This action can be implemented as early as Fall semester of 2013.

Key/Responsible Person: Instructor (currently Mike Williamson)

Measures: within five years the recommendation will be added to the course catalog and followed by all students

Resource Allocations: none

SLO 4.2 – Develop administrative controls for workplace hazard resolution

The following action is associated with the evidence collected for this assessment outcome from SFTY 416 class during Spring semester 2013.

Action Details: The students will be required to complete SFTY 212, 314, 315, 318, 319, 328, and 335 prior to registering in SFTY 416 class or concurrent with it.

Implementation Plan: this action can be implemented as early as Fall semester of 2013.

Key/Responsible Person: Instructor (currently Mike Williamson)

Measures: within five years the recommendation will be added to the course catalog and followed by all students

Resource Allocations: none

SLO 4.3 – Select appropriate personal protective equipment when engineering or administrative controls are inadequate

The following action is associated with the evidence collected for this assessment outcome from SFTY 416 class during Spring semester 2013.

Action Details: The students will be required to complete SFTY 212, 314, 315, 318, 319, 328, and 335 prior to registering in SFTY 416 class or concurrent with it.

Implementation Plan: this action can be implemented as early as Fall semester of 2013.

Key/Responsible Person: Instructor (currently Mike Williamson)

Measures: within five years the recommendation will be added to the course catalog and followed by all students

Resource Allocations: none

SLO 4.4 – Develop written training programs to educate workers in the use of engineering, administrative and PPE controls

The following action is associated with the evidence collected for this assessment outcome from SFTY 416 class during Spring semester 2013.

Action Details: The students will be required to complete SFTY 212, 314, 315, 318, 319, 328, and 335 prior to registering in SFTY 416 class or concurrent with it.

Implementation Plan: this action can be implemented as early as Fall semester of 2013.

Key/Responsible Person: Instructor (currently Mike Williamson)

Measures: within five years the recommendation will be added to the course catalog and followed by all students

Resource Allocations: none

Student Outcome #5—Select the proper collection, reporting, and summarization methods for incident reporting

Objectives	Course #	Assessment Methods	Source and Type of Assessment	Time of Data Collection	Assessment Coordinator	Evaluation of Results
SLO 5.1 Select proper data collection method for recordable incident reporting	212, 314, 318,416, 423, 492	Evaluation of completed OSHA 300 and 301 forms	SFTY 318 Assignment & Exam	Fall 2013	SM Program Coordinator	SM Program Team
SLO 5.2 Select proper paper and electronic incident reporting forms	212, 314, 318,416, 423, 492	Evaluation of completed OSHA 300, 300A, and 301 forms	SFTY 318 Assignment & Exam	Fall 2013	SM Program Coordinator	SM Program Team
SLO 5.3 Select proper incident data summarization procedures and forms as per 29CFR1904	212, 314, 318,416, 423, 492	Evaluation of completed OSHA 300 and 300A forms	SFTY 318 Assignment & Exam	Fall 2013	SM Program Coordinator	SM Program Team

The goal of this outcome is for students to demonstrate their ability to accurately record and report injury/illness data using OSHA-required forms. Students are presented with a list of hypothetical incidents including brief descriptions of the workers' activities and locations at the time of the incident. Students must determine which of the incidents meet the criteria for including on the OSHA 300 log, correctly classify the injury or illness, complete the OSHA 300 log for all recordable injuries and illnesses, complete the OSHA 300A Summary form, and fill out an OSHA 301 Incident Report form. They also must accurately calculate an OSHA Recordable

Incidence rate and a Severity rate. Students must demonstrate successful use of both paper and electronic forms. A total of 44 students were enrolled in SFTY 318 during the Fall 2013 semester when this assessment was completed.

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 5.1 – Select proper data collection method for recordable incident reporting				
Students completely and accurately complete OSHA 301 Supplemental Incident Report	Form is not completed at all <i>Number of Students Score 1: 2 of 44</i>	Most of form is completed, but information is missing or incorrect <i>Number of Students Score 2: 26 of 44</i>	Form is nearly complete and information is clear and accurate <i>Number of Students Score 3: 9 of 44</i>	Form is accurately completed <i>Number of Students Score 4: 7 of 44</i>
Students correctly identify recordable incidents and complete OSHA 300 Log	No incidents are entered correctly on the form <i>Number of Students Score 1: 2 of 44</i>	Incidents are entered, but some recordable cases are missing or non-recordable cases included <i>Number of Students Score 2: 5 of 44</i>	No more than one case missing or improperly included <i>Number of Students Score 3: 22 of 44</i>	All recordable cases are included with no non-recordable cases <i>Number of Students Score 4: 15 of 44</i>
Students assign recordable cases to correct classification (fatality, lost workday cases, cases not involving death or last workday) (injury or type of illness)	No attempt to classify recorded cases <i>Number of Students Score 1: 2 of 44</i>	Numerous Incomplete or incorrect classifications <i>Number of Students Score 2: 4 of 44</i>	Not more than 1 incorrectly classified case <i>Number of Students Score 3: 25 of 44</i>	All cases classified correctly <i>Number of Students Score 4: 13 of 44</i>
Students correctly report lost or restricted workdays on OSHA 300 Log	No attempt to record lost/restricted workdays <i>Number of Students Score 1: 2 of 44</i>	Incorrect counting of lost/restricted workdays on multiple cases <i>Number of Students Score 2: 8 of 44</i>	Not more than 1 case with incorrectly counted lost/restricted workdays <i>Number of Students Score 3: 15 of 44</i>	All lost/restricted workdays correctly counted <i>Number of Students Score 4: 19 of 44</i>

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 5.2 – Select proper paper and electronic incident reporting forms				
Students demonstrate ability to accurately enter data on electronic reporting forms OSHA 300, OSHA 300A, OSHA 301	Form is not completed at all <i>Number of Students Score 1: 2 of 44</i>	Most of form is completed, but information is missing or incorrect <i>Number of Students Score 2: 0 of 44</i>	Form is nearly complete and information is clear and accurate <i>Number of Students Score 3: 0 of 44</i>	Form is accurately completed <i>Number of Students Score 4: 42 of 44</i>
Students demonstrate ability to accurately enter data on paper reporting forms OSHA 300, OSHA 300A, OSHA 301	No incidents are entered correctly on the form <i>Number of Students Score 1: 2 of 44</i>	Incidents are entered, but some recordable cases are missing or non-recordable cases included <i>Number of Students Score 2: 0 of 44</i>	No more than one case missing or improperly included <i>Number of Students Score 3: 12 of 44</i>	All recordable cases are included with no non-recordable cases <i>Number of Students Score 4: 30 of 44</i>

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 5.3 – Select proper incident data summarization procedures and forms as per 29CFR1904				
OSHA Form 300A Summary is completely and accurately completed	Form is not completed at all <i>Number of Students Score 1: 2 of 44</i>	Most of form is completed, but information is missing or incorrect <i>Number of Students Score 2: 2 of 44</i>	Form is nearly complete and information is clear and accurate <i>Number of Students Score 3: 3 of 44</i>	Form is accurately completed <i>Number of Students Score 4: 37 of 44</i>
Man-hours worked are correctly calculated	No attempt to calculate man-hours worked <i>Number of Students Score 1: 2 of 44</i>	Calculation attempted but incorrect use of formula <i>Number of Students Score 2: 6 of 44</i>	Calculations correct except for arithmetic errors <i>Number of Students Score 3: 14 of 44</i>	Correctly calculated <i>Number of Students Score 4: 22 of 44</i>
Incident rate is correctly calculated	No attempt to calculate incident rate <i>Number of Students Score 1: 2 of 44</i>	Calculation attempted but incorrect use of formula <i>Number of Students Score 2: 9 of 44</i>	Calculations correct except for arithmetic errors <i>Number of Students Score 3: 16 of 44</i>	Correctly calculated <i>Number of Students Score 4: 17 of 44</i>
Severity rate is correctly calculated	No attempt to calculate severity rate <i>Number of Students Score 1: 2 of 44</i>	Calculation attempted but incorrect use of formula <i>Number of Students Score 2: 9 of 44</i>	Calculations correct except for arithmetic errors <i>Number of Students Score 3: 21 of 44</i>	Correctly calculated <i>Number of Students Score 4: 12 of 44</i>

Assessment Findings for Outcome #5 (SFTY 318)

Description: Students are expected to demonstrate their ability to collect, record, and analyze injury data using both paper and electronic OSHA recordkeeping forms. This includes correctly identifying incidents that should be recorded, calculating lost workdays, total man-hours worked, OSHA incidence rates, and severity rates as well as accurately entering information on 3 separate forms: the OSHA 300 Log of Recordable Incidents, the OSHA 300A Annual Summary Form, and the OSHA 301 Supplemental Record of Individual Incidents.

Goal: The goal of this assessment is to determine if students have secured the skills to completely and accurately identify and classify work-related injuries and fatalities and to properly record incidents on required OSHA forms.

Target: The Target for this assessment was to determine if 75% of the students enrolled in this class have received a score of 75% or higher.

Findings: According to the assessment rubric and evidence collected during the Fall 2013 semester, a total of 44 students from two course sections were enrolled in SFTY 318. Of those, two students did not receive final passing grades in the class. The assessment rubric was developed to evaluate students' performance in three Student Learning Objectives (SLO). Following summarizes those findings:

SLO 5.1-Proper data collection method for recordable incident reporting. This SLO was further divided into four sub-objectives. The first of those was "Students completely and accurately complete OSHA 301 Supplemental Incident Report". Only 16 students (36.4%) scored 75% or higher on this criterion. Clearly, most students did not meet our expectations for correctly completing these incident reports. The second sub-objective was "students correctly identify recordable incidents and complete OSHA 300 Log". 37 students (84.1%) scored 75% or higher, although 50% of the class scored just 75%. While this did meet our target, there is clearly room for substantial improvement. The third sub-objective was "students assign recordable cases to correct classification". Here 38 students (86.4%) scored 75% or higher, but more than one-half of the class scored just 75%, again leaving room for much improvement. The fourth and final sub-objective was "students correctly report lost or restricted workdays on OSHA 300 Log". Within SLO 5.1, this sub-objective showed the best student performance as far as those scoring 100% (19 students or 43.2%), but the total scoring 75% or above was 34 (77.3%). This meets the target, but just barely. Once again, there is room for improvement.

Overall, for SLO 5.1 averaging across the sub-objectives, only 71.0% of the students scored 75% or better. We must consider this objective unsatisfactory.

SLO 5.2—Select proper paper and electronic incident reporting forms. This SLO was divided into two sub-objectives. The first of those was "students demonstrate the ability to accurately enter data on electronic reporting forms OSHA 300, 300A, and 301". Here 42 students (95.5%) scored 100%. The second was "students demonstrate ability to accurately enter data on paper

reporting forms OSHA 300, 300A, and 301". Here those same 42 students scored 75% or better, with 30 of them scoring 100%. We are satisfied with the performance on SLO 5.2.

SLO 5.3—Select proper incident data summarization procedures and forms as per 29CFR1904. This SLO was divided into four sub-objectives. The first of these was "OSHA Form 300A Summary is completely and accurately completed". 40 students (90.9%) scored 75% or higher with 37 of them scoring 100%. The second sub-objective was "man-hours worked are correctly calculated". 36 students (81.8%) scored 75% or better and one-half of the class scored 100% on this criterion. This met our target, but improvement is possible. The third sub-objective was "incident rate is correctly calculated". This rate is calculated from a simple formula, but requires accurate incident classification and man-hour calculation first. 33 students (75.0%) scored at or above 75%, just meeting the target. The last sub-objective was "severity rate is correctly calculated". This involves a similar formula to the incident rate and again 75% of the students scored 75% or above, but this time there were fewer students scoring 100%.

Overall, 80.3% of the scores were 75% or higher for the sub-objectives under SLO 5.3. This does meet our target of 75%, but leaves room for improvement.

It should be noted that a majority of the students in these sections (27 students or 61.4%) were international students for whom English is a second language. However, the recordkeeping topic had been introduced in two courses that most of the students had already completed. In general, we are not pleased with the assessment of this program outcome.

Action Plan for program outcome 5 (SFTY 318)

SLO 5.1 – Proper data collection method for recordable incident reporting

The following action is associated with the evidence collected for this assessment outcome from SFTY 318 class during Fall semester 2013.

Action Details: Additional teaching efforts will be made in SFTY 212 and SFTY 314 classes regarding OSHA recordkeeping to better prepare students for this course.

Implementation Plan: this action can be implemented as early as Fall semester of 2014.

Key/Responsible Person: Instructors for SFTY 212, 314, and 318 (currently Greg Dewey, Doug Timmons, and Joe Eckerle)

Measures: within five years the recommendation will be added to the course catalog and followed by all students

Resource Allocations: none

SLO 5.2 – Select proper paper and electronic incident reporting forms

The following action is associated with the evidence collected for this assessment outcome from SFTY 318 class during Fall semester 2013.

Action Details: Current instruction appears to be effective. No changes proposed at this time.

Implementation Plan: N/A

Key/Responsible Person: Instructor (currently Joe Eckerle)

Measures: N/A

Resource Allocations: none

SLO 5.3 – Select proper incident data summarization procedures and forms as per 29CFR1904.

The following action is associated with the evidence collected for this assessment outcome from SFTY 318 class during Fall semester 2013.

Action Details: Additional class time and another assignment need to be added to this portion of the course to ensure students have a clear understanding of the use of OSHA forms and rate calculations.

Implementation Plan: this action can be implemented as early as Fall semester of 2014.

Key/Responsible Person: Instructor (currently Joe Eckerle)

Measures: within five years the recommendation will be added to the course syllabus and followed by all students

Resource Allocations: none

Student Outcome #6—Prioritize and recommend the proper action level (design, safety device, warning device, training, or PPE) and control technique for loss exposure (engineering control, administrative control, or PPE) to prevent injuries and property losses

Objectives	Course #	Assessment Methods	Source and Type of Assessment	Time of Data Collection	Assessment Coordinator	Evaluation of Results
SLO 6.1 Prioritize hazard control and management techniques for economic, property, and personnel loss exposures	212, 314, 315, 315L, 318, 319, 328, 335, 335L, 416, 423, 460, 492	Rubric on industrial partnership project	SFTY 416 Assignments	Spring 2012	SM Program Coordinator	SM Program Team
SLO 6.2 Recommend action levels including design, safety devices, warning devices, training, or PPE to prevent injuries and property losses	212, 314, 315, 315L, 318, 319, 328, 335, 335L, 416, 423, 460, 492	Rubric on industrial partnership project	SFTY 416 Assignments	Spring 2012	SM Program Coordinator	SM Program Team

Program Outcome #6: Prioritize and recommend the proper action level (design, warning device, training or PPE) and control techniques for loss exposures (engineering controls, administrative control, or PPE) to prevent injuries and property losses

The term project assignment for SFTY 416 spring 2013 (evidence)

SFTY 416 is a course aimed at developing individual leadership and organizational processes that will help prepare students for a career in Safety Management. Experiential learning has proven to be effective in education and this course will be based totally on concepts utilizing experiential processes. Students must be seniors who have completed a majority of their major courses. The final project for each student will be to evaluate and/or develop a model Safety Management program for an employer.

In Spring 2013, 33 students were enrolled in the SFTY 416 class and here are the evaluation results of their performance and learning outcome according to the rubric scale:

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 6.1 – Prioritize management techniques for economic, property, and personnel loss exposure				
Provide written team proposal for developing an exemplary safety management system that would qualify for certification as a VPP Star Worksite.	It is not possible to understand what the scope of the project is.	The report is not very specific and not well organized.	The report is specific but not organized.	The report is very specific and well organized.
	<i>Number of Students Score 1: 0 of 32</i>	<i>Number of Students Score 2: 0 of 32</i>	<i>Number of Students Score 3: 4 of 32</i>	<i>Number of Students Score 4: 28 of 32</i>

	<i>Assessment Rating Scale</i>			
	<i>25%</i>	<i>50%</i>	<i>75%</i>	<i>100%</i>
SLO 6.2 – Recommend action levels including design, safety devices, warning devices, training, or PPE to prevent injuries and property losses				
Provide written team proposal for developing an exemplary safety management system including recommendations for design, safety devices, warning devices, training, or PPE	It is not possible to understand what the scope of the project is. <i>Number of Students</i> <i>Score 1: 0 of 32</i>	The report is not very specific and not well organized. <i>Number of Students</i> <i>Score 2: 0 of 32</i>	The report is specific but not organized. <i>Number of Students</i> <i>Score 3: 4 of 32</i>	The report is very specific and well organized. <i>Number of Students</i> <i>Score 4: 28 of 32</i>

Assessment Findings for Outcome #6 (SFTY 416)

Description: Students work in small groups with assigned industry partners to develop administrative plans for implementing an effective safety and health program within that particular business. The project requires knowledge of OSHA standards, monitoring techniques, corporate mission and goals, and teamwork.

Goal: The goal of this assessment is determine if the students gain the right skills and knowledge to develop comprehensive plans for administration of corporate safety policies and procedures.

Target: The Target for this assessment was to determine if 75% of the students enrolled in this class have received a score of 75% or higher.

Findings: according to the assessment rubric and evidence collected during the Spring semester of 2013, 32 students completed this course. At the end of the semester all of the students scored 75% or more for every criterion under the Student Learning Objective (SLO) 6.1 and SLO 6.2.

The average grade for all criteria under SLO 6.1 and 6.2 were 97%. Hence, in conclusion, this course was successful to achieve its target as mentioned above.

Recommendations for Improvement: the instructor can prepare a short lecture/presentation about methods of hazard control and put more emphasize on engineering controls in order to help students with non-engineering/technical backgrounds achieve better results.

Action Plan for program outcome 6 (SFTY 416)

Program Outcome 6 - Prioritize and recommend the proper action level (design, safety device, warning device, training and PPE) and control techniques for loss exposure (engineering controls, administrative controls, or PPE) to prevent injuries and property losses: understanding the concept of different types of hazards, identifying hazards, and showing competency in prioritizing and recommending control methods in order to prevent injuries and property losses.

SLO 6.1 – Prioritize hazard control and management techniques for economic, property, and personnel loss exposure

The following action is associated with the evidence collected for this assessment outcome from SFTY 416 class during Spring semester 2013.

Action Details: The students will be required to complete SFTY 212, 314, 315, 318, 319, 328, and 335 prior to registering in SFTY 416 class or concurrent with it.

Implementation Plan: this action can be implemented as early as Fall semester of 2013.

Key/Responsible Person: Instructor (currently Mike Williamson)

Measures: within five years the recommendation will be added to the course catalog and followed by all students

Resource Allocations: none

SLO 6.2 – recommend action levels including design, safety devices, warning devices, training, or PPE to prevent injuries and property losses

The following action is associated with the evidence collected for this assessment outcome from SFTY 416 class during Spring semester 2013.

Action Details: The students will be required to complete SFTY 212, 314, 315, 318, 319, 328, and 335 prior to registering in SFTY 416 class or concurrent with it.

Implementation Plan: this action can be implemented as early as Fall semester of 2013.

Key/Responsible Person: Instructor (currently Farman A. Moayed)

Measures: within five years the recommendation will be added to the course catalog and followed by all students

Resource Allocations: none

Student Outcome #7—Gain the necessary quantitative and analytical skills to manage a safety department regarding the economical, financial and decision making aspects of safety management

Objectives	Course #	Assessment Methods	Source and Type of Assessment	Time of Data Collection	Assessment Coordinator	Evaluation of Results
SLO 7.1 Apply probability theory to assess risk levels	212, 315, 315L, 328, 335, 335L, 411, 416, 460, 492	Systems assessment rubric	SFTY 411 Assignment	Spring 2015	SM Program Coordinator	SM Program Team
SLO 7.2 Apply principles of engineering economics to management decision making	212, 315, 315L, 328, 335, 335L, 411, 416, 460, 492	Systems assessment rubric	SFTY 411 Assignment	Spring 2015	SM Program Coordinator	SM Program Team

Assessment of Outcome #7 will be completed by Fall 2015.

B. Continuous Improvement

2014 Status Report for Safety Management BS Assessment Action Plan

Based on findings from 2012-13 Outcomes Assessments

3.1: Develop content-specific safety training programs

3.2: Demonstrate proficiency in small group presentations

The students will be required to complete SFTY 212, 314, 315, 318, 319, 328, and 335 prior to registering in SFTY 423 class or concurrent with it. Opportunities for student oral presentations will be incorporated into many of these listed courses.

This action can be implemented as early as Fall semester of 2013. Instructor (currently Mike Williamson).

Results: Prerequisite requirement changes were approved during the Spring 2014 semester for the SFTY 423 class. Those requirements now are: 1. Senior status and 2. Safety Management major.

By requiring senior status rather than a long list of prerequisite courses we have effectively eliminated unprepared students from enrolling in this course. The class is one of two that we restrict to seniors in the program. They are required to develop and present training programs for relevant topics.

3.3: Develop effective written and oral presentation skills

The students will be required to complete SFTY 212, 314, 315, 318, 319, 328, and 335 prior to registering in SFTY 423 class or concurrent with it. Any student with a grade below "C" in any of the following classes will be required to show evidence of additional tutoring or instruction in written English and public speaking: ENG 101, ENG 105, ESL 103A, ESL 103B, ENG 305, ENG 305T, COMM 101.

This action can be implemented as early as Fall semester of 2013. Instructor (currently Mike Williamson).

Results: As of Fall 2014 semester, we have not attempted to implement this action. However, restricting the course to seniors has resulted in improved overall writing and speaking skills.

4.1: Apply principles of engineering to workplace hazard resolution

4.2: Develop administrative controls for workplace hazard resolution

4.3: Select appropriate personal protective equipment when engineering or administrative controls are inadequate.

4.4: Develop written training programs to educate workers in the use of engineering, administrative and PPE controls

The students will be required to complete SFTY 212, 314, 315, 318, 319, 328, and 335 prior to registering in SFTY 416 class or concurrent with it.

This action can be implemented as early as Fall semester of 2013. Instructor (currently Mike Williamson).

Results: Prerequisite requirement changes were approved during the Spring 2014 semester for the SFTY 416 class. Those requirements now are: 1. Senior status 2. Safety Management major.

By requiring senior status rather than a long list of prerequisite courses we have effectively eliminated unprepared students from enrolling in this course. The class is one of two that we restrict to seniors in the program. Students are required to develop safety administration programs working directly with area businesses.

6.1: Prioritize hazard control and management techniques for economic, property, and personnel loss exposures.

Students will incorporate hazard control and management techniques into cooperative industry partnership projects.

6.2: Recommend action levels including design, safety devices, warning devices, training, or PPE to prevent injuries and property losses.

Industry partnership projects will include student recommendations for reducing or eliminating hazards that lead to injuries and property losses.

This action can be implemented as early as Fall semester of 2013. Course instructor (currently Mike Williamson).

Results: Implementation of some of the corporate partnership initiatives were delayed due to instructor's illness at the end of Fall 2013 and through the Spring 2014 semesters. Beginning with this Fall 2014 semester these partnership project reports will be graded based in part on the inclusion of hazard control and management techniques and recommendations for reducing or eliminating hazards that lead to injuries and property losses.

2015 Status Report for Safety Management BS Assessment Action Plan

Based on findings from 2013-14 Outcomes Assessments

5: Select the proper methods for incident reporting

Select the proper collection, reporting, and summarization methods for incident reporting.

5.1: Select proper data collection method

Select proper data collection method for recordable incident reporting. Additional teaching efforts will be made in SFTY 212 and SFTY 314 classes regarding OSHA recordkeeping to better prepare students for this course.

This action can be implemented as early as Fall semester of 2014. Instructors for SFTY 212, 314, and 318 (currently Greg Dewey, Doug Timmons, and Joe Eckerle).

Results: Within five years the recommendation will be added to the course catalog and followed by all students.

5.2: Select proper incident reporting forms

Select proper paper and electronic incident reporting forms.

Current instruction appears to be effective. No changes proposed at this time. Instructor (currently Joe Eckerle).

Results: Within five years the recommendation will be added to the course catalog and followed by all students

5.3: Incident data summarization

Select proper incident data summarization procedures and forms as per 29CFR1904. Additional class time and another assignment need to be added to this portion of the course to ensure students have a clear understanding of the use of OSHA forms and rate calculations.

This action can be implemented as early as Fall semester of 2014. Instructor (currently Joe Eckerle).

Results: Within five years the recommendation will be added to the course catalog and followed by all students

3. CURRICULUM

1. Curriculum Alignment with the Program Educational Objectives

The Safety Management program aims to provide graduates with the skill set to succeed in a vast array of industries by teaching technical knowledge, verbal and written communications, resource acquisition, responsibility, and all the while promoting lifelong learning. Examples of these competencies include:

PEO #1—Communication competency. ISU's general education curriculum includes one course in speech communications (Comm 101) and two courses in composition (Eng 105, and 305). In addition, the Safety Management program includes courses which require students to prepare written reports (212, 314, 416, 460 492), oral presentations (411, 423, 492), and group presentations (212, 411, 416, 423). Every student who successfully completes the Safety Management program will have classroom experience teaching training programs, writing incident reports, and presenting their ideas to superiors.

PEO #2—Technical competency. The primary strength of our undergraduate program in Safety Management lies in the technical education component. Students begin by learning a history of occupational safety and health efforts (212), then learn to classify recordable incidents (212, 314, 318). Standards are taught early on in the program (314), followed by hazard recognition and classification (315, 318, 319, 328, 335, 411). Students learn to use instruments to monitor and assess contaminant exposures (315L, 335L). From the basis of this knowledge, students progress into the upper level courses (411, 416, 423, 446, 460, 492) where they are expected to apply the principles learned in earlier courses to solving theoretical and actual workplace safety issues. The culmination of the education is a required supervised internship (492) where students are actually placed into a work environment and learn to apply the skills they have acquired in the classroom and laboratory.

PEO #3—Resource accessibility. We do not expect our graduates to know everything they will need to have a successful career in the safety industry, but a concerted attempt is made to teach them to access and utilize resources that are available. Students learn early in the program how to access and understand standards within the Code of Federal Regulations (CFR), the National Fire Code (NFC), the American National Standards Institute (ANSI), and other sources (212, 314, 315, 318, 328). The aim is that graduates know where and how to locate critical information to succeed in their careers.

PEO #4—Lifelong Learning competency. Students are encouraged to pursue professional certifications (CSP, CIH, CHMM, OHST, CHST, etc.) as they progress through their careers. Questions and problems similar to those they might encounter on certification exams are incorporated into every course in the curriculum. Our graduates have good success in passing certification exams. Furthermore, students are encouraged to join the American Society of Safety Engineers (ASSE) and maintain professional membership after graduation.

PEO #5—Responsibility competency. Upper level courses in the program provide experience in promoting responsibility and ethical practices. The goal of any safety professional is to see that

every employee returns home after their shift at least as healthy as they arrived to work. Students are trained to be observant of employee behaviors and to counsel individual employees when necessary (416, 423, 492).

TABLE 4-1. PROGRAM ENROLLMENT AND DEGREE DATA

Safety Management

	Academic Year		Enrollment Year					Total Undergrad	Total Grad	Degrees Awarded			
			1st	2nd	3rd	4th	5th			Associates	Bachelors	Masters	Doctorates
Current Year	Fall 2014	FT	19	29	44	20	1	103	10		(Fall Only) 9	(Fall Only) 3	
		PT	16	17	12	14	2	10	51				
1	2013	FT	17	56	39	3		99	16				
		PT	14	23	17	7		8	53		19	13	
2	2012	FT	19	58	15			85	7				
		PT	11	19	12			6	36		22	8	
3	2011	FT	40	34				68	6				
		PT	22	16				10	28		23	2	
4	2010	FT	NA*	NA*	NA*	NA*	NA*	63	6				
		PT	NA*	NA*	NA*	NA*	NA*	9	22		18	10	

FT – full time

PT – part time

* = not available