

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.

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.

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.

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

Table 1-1. Relationship of Program Student Outcomes to General Criteria Student Outcomes and Program Specific Criteria Student Outcomes

Safety Management

Program Student Learning Objectives (SLO)	ABET Student Outcomes											ASSE Outcomes								
	A	B	C	D	E	F	G	H	I	J	K	1	2	3	4	5	6	7	8	
SLO 1.1 Identify common hazards (workplace and general)										*		*		*			*			
SLO 1.2 Describe common hazards (workplace and general)										*		*		*			*			
SLO 1.3 Classify common hazards (workplace and general)												*		*						
SLO 2.1 Assess risk as it pertains to occupational safety management					*								*							
SLO 2.2 Diagram fault trees and identify cut sets and single point failures in systems			*											*						
SLO 2.3 Explains risk for different segments of the population								*					*							
SLO 3.1 Develop content-specific safety training programs						*		*							*	*				
SLO 3.2 Demonstrate proficiency in small group presentations				*			*									*				
SLO 3.3 Develop effective written and oral presentation skills							*								*	*				
SLO 4.1 Apply principles of engineering to workplace hazard resolution	*				*			*				*								
SLO 4.2 Develop administrative controls for workplace hazard resolution												*			*					
SLO 4.3 Select appropriate personal protective equipment when engineering or administrative controls are inadequate										*				*						
SLO 4.4 Develop written training programs to educate workers in the use of engineering, administrative and PPE controls			*			*								*	*					
SLO 5.1 Select proper data collection method for recordable incident reporting											*							*		
SLO 5.2 Select proper paper and electronic incident reporting forms											*							*		
SLO 5.3 Select proper incident data summarization procedures and forms as per 29CFR1904		*									*	*						*		
SLO 6.1 Prioritize hazard control and management techniques for economic, property, and personnel loss exposures					*					*		*		*	*					
SLO 6.2 Recommend action levels including design, safety devices, warning devices, training, or PPE to prevent injuries and property losses			*							*		*		*	*					
SLO 7.1 Apply probability theory to assess risk levels	*										*		*		*					
SLO 7.2 Apply principles of engineering economics to management decision making			*							*	*				*					
ASP/CSP Test Scores									*											
Accident Investigation and Analyses																			*	
Internship Experience																				*

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/>

Relationship of Student Outcomes to Program Educational Objectives

Table 1-2- 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

TABLE 1-3. 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