Integrating Personal & Occupational Safety in an Engineering Curriculum

Joseph J. Cecere
Penn State Harrisburg

Abstract

An objective of an educational program is to keep a program current and support it in achieving their goals. However, this may prove difficult if the program does not keep abreast of the rapid changes, advancements or does not integrate material that is critical to the success of the program, its students, and the profession.

This paper examines PSH's Structural Design, Construction, and Engineering Technology (SDCET program), and incorporating a required safety course has part of its curriculum. The course does not only cover subject matter in preparing the students in their professions but also with everyday safety material to help them in their personal life. The course has been approved by the university academic governance in completing the university undergraduate degree "Health Wellness" (GHW) and the "United States" (GUS) general education requirements. Therefore, the course eliminates two undergraduate college requirements, the degree course safety requirement and allows the student to consider other courses which meets the credit hour requirement for the degree.

Another element incorporated in the safety course is the student completes the OSHA (Occupational Safety Health Administration) 30-hour training course. This training course is becoming a requirement in construction related projects from the clients and employers. Therefore, more construction/engineering firms require their employees to obtain this OSHA safety training course shortly have starting their employment. Hence, the SDCET student resume has another unique feature when being reviewed by a potential employer. The credential is rarely listed on a college student resume

This course has resulted in an excellent relationship with various professionals, society, and the program's success in preparing its students. Incorporating a safety course in the curriculum, is an excellent example of a win-win relationship for both the program, the students and the industry.

Introduction

Partnership between educational institution, industries, and other units continues to foster excellent collaboration. There are many universities that partner closely with business and industry to fit their needs. Universities and industries traditionally maintained relationships which may include some of the same activities. The purpose of this SDCET's partnership meets numerous elements in educating and preparing its students. However, the safety course is unique since it is not rarely covered in a specific course. The information and training they receive are vital for the student's success in this chosen career. Again, programs that cultivated and strengthen these relationships with firms, professional, society, and others.

The purpose of this paper is to discuss the Penn State Harrisburg's Structural Design & Construction Engineering Technology safety course and their collaboration. These various activities demonstrated an excellent example of a win-win relationship, will not only benefit the program as well as support its students and industry.

Construction Related Industry

The Structural Design, Construction, and Engineering Technology (SDCET)program is unique in its addresses only two areas: structural design and construction management. The employer representatives' engineers, construction, federal, state and local agencies, small and large firms; national and/or regional recognition firms as well as a diverse viewpoint. These also include a representative from numerous organization such as US Department of Transportation (DOT); Pennsylvania Department of Transportation (Penn DOT), associations like Associated General Contractors of America (AGC) & Associated Builders and Contractors (ABC), (NSPE) National Society of Professional Engineers, and varies other firms. These employers may include a mixed group with different goals but one common goal being safety. The groups provide valuable resources to legal; licensure; engineering/architect/construction activities, and interaction access to various safety undertakings.

This interaction is an advisory capacity to the program, the School of Science, Engineering and Technology, and the college. Again, one of these firm's major goals is to ensure "safety" by identify, stressing it and incorporating it on all projects They see the safety certified has huge advantage and being incorporated in the curriculum. This involvement also has assisted in the program's accreditation.

The school and program also recognized that having this course meeting OSHA 30-hour training is an additional element in the student's education. Their support includes providing financial support to have a professor completing the various OSHA instructor required training courses who will teach the course and fund teaching aids.

Students in other majors have completed this course has they also see the OSHA certification as another item on their resumes. It also has other students being safety aware. Again, their employers have acknowledged this achievement as valuable factor in their educational preparation.

OSHA Certification

This safety course not only integrates Penn State Harrisburg health education and general education requirements that most other colleges also require but it also provides a national recognized 30 Hour OSHA certified. The certified is not offered in most of universities safety courses. Again, one of engineering firm's major goals is to ensure "safety" by identify, stressing it and incorporating it on all projects. Even the program's accreditation (ABET) sees the certified has a "plus" in the curriculum and for the graduates. The course is other example that universities could consider as well as their others. The university needs.to think outside other status quote and be accountable for present and future financial burdens placed on their customer, the students.

Personal Safety Training

In addition to professional safety components. Personal course material includes safety awareness for the participants in their everyday life's. The course addresses safety in the dwelling (home, apartment etc.) that includes in and out security; falling/tripping; personal protective equipment for various activities like lawn service, lighting; emergency resources (telephone numbers, flashlights, etc.) sidewalk clearance, hazardous elements such has substance/drug handling & usage, material storage and handling, and others safety basics. These topics also include an awareness for their interaction with older adults or children.

Personal safety activities also weather conditions; fire distinguish & extinguishers; children safety, and transportation (automobile, road; plane, train, bus subway). University safety component- such as classroom, audible and visual fire alarms, fire extinguisher locations; exits, campus security, etc. are other personal activities addressed in the course.

The students are more safety awareness in the environments that more colleges have determine has a major factor in their education role. Several class activities include university safety assessment that the college has supported, funded, and benefited.

Outreach Programs

Another key to the win- win partnership is the program outreach. University safety personal as well as other safety agencies have been guest speakers. These introductions have both parties more aware of the importance of the various Students are more aware of the various safe features in their education surroundings. They are introduced to resources that they were not fully familiar with or how to properly use them.

Summary

College students and graduates nationwide are swimming in debt after borrowing heavily to meet soaring college costs. One goal for all universities should be to ensure a quality bachelor's degree while minimizing the monetary impact for their students. This safety course integrates various Penn State Harrisburg requirements that most other colleges also require. It also provides a national recognized 30 Hour OSHA certified that large number of universities do not offer. This course is other examples that universities could consider as well as their others. The university needs.to think outside their status quote and be accountable for present and future financial burdens placed on their customer, the students.

Topics

Safety Statistics
Accident Cost
Worker Compnsation
Accident Investigation
Home & Work Personal Protective Equipment (PPE)

Fire Prevention, Preparation & Response,
  Fire Extinguishers- Types & Use
  Home Fire Prevention
Health and Hazardous Communications
Electricity, Basic General Electrical Safety
Stairs & Ladders
Fall Protection
Children Safety
Dwelling & College Safety
Transportation Safety
Safety Programs

References

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2) OSHA 29 CFR 1926 Safety and Health Regulations for Construction**,** 2020
3) Penn State University Faculty Senate, Curriculums Committee, 2004.
4) Penn State University Safety Manual, updated 2021.
5) "How to Engineer and Maintain Safe Practices," Safety & Health, May, 2019

Biography

JOSEPH J. CECERE, PhD, CPC, is an associate professor of Engineering in the Structural Design & Construction Engineering Technology as well as the Civil Engineering program at Penn State Harrisburg. He is an OSHA safety instructor for numerous OSHA programs. Telephone number 717- 948-6135 (Office)