



## New Program Report

**Date Submitted:**

12/12/2018

**Institution**

University of Central Missouri

**Site Information**

**Implementation Date:**

8/19/2019 12:00:00 AM

**Added Site(s):**

**Selected Site(s):**

University of Central Missouri, Administration 202, Warrensburg, MO, 64093

**CIP Information**

**CIP Code:**

150701

**CIP Description:**

A program that prepares individuals to apply basic engineering principles and technical skills in support of engineers and other professionals engaged in maintaining job-related health and safety standards. Includes instruction in safety engineering principles, inspection and monitoring procedures, testing and sampling procedures, laboratory techniques, applications to specific work environments, and report preparation.

**CIP Program Title:**

Occupational Safety and Health Technology/Technician

**Institution Program Title:**

Environmental, Safety & Risk Management

**Degree Level/Type**

**Degree Level:**

Bachelor's Degree

**Degree Type:**

Bachelor of Science

**Options Added:**

**Collaborative Program:**

N

**Mode of Delivery**

**Current Mode of Delivery**

Classroom

Online

Student Preparation



## New Program Report

Special Admissions Procedure or Student Qualifications required:

Students are required to have a completed AA or AAS degree for admission into this BS degree completion program. If their program is not already articulated, students will need to meet with the program coordinator to determine how the courses will apply in this degree and determine remaining requirements.

Specific Population Characteristics to be served:

Working professionals, individuals with completed AA or AAS degrees, career-changers

Faculty Characteristics

Special Requirements for Assignment of Teaching for this Degree/Certificate:

Minimum is MS degree in discipline; or MS degree, certification and work experience in the discipline

Estimate Percentage of Credit Hours that will be assigned to full time faculty:

All credit hours will be assigned to full time faculty.

Expectations for professional activities, special student contact, teaching/learning innovation:

Online faculty will be expected to complete the Quality Matters course/meet UCM online faculty requirements.

Student Enrollment Projections Year One-Five

Year 1	Full Time: 5	Part Time: 5	
Year 2	Full Time: 12	Part Time: 13	
Year 3	Full Time: 17	Part Time: 18	Number of Graduates: 15
Year 4	Full Time: 22	Part Time: 23	
Year 5	Full Time: 29	Part Time: 31	Number of Graduates: 45

Percentage Statement:

100.00

Program Accreditation

Institutional Plans for Accreditation:

Will seek Qualified Academic Program status through the BCSP upon final approval of degree. Cannot submit for ABET accreditation until such a time that graduates exist. Will review the feasibility of ABET over the first five years.

Program Structure

Total Credits:

120



## New Program Report

**Residency Requirements:**

A candidate for any bachelor's degree must have earned the following minimum hours in residence at UCM:

- 30 hours overall
- 20 upper-level hours (3000/4000 level courses)
- 15 hours in the major
- 9 upper-level hours in the major
- 9 hours in the minor (if applicable)
- 1 upper-level hour in the minor (if applicable)
- the last 12 semester hours or any hours during the final semester required for the degree\*

**General Education Total Credits:**

42

**Major Requirements Total Credits:**

82

**Course(s) Added**

COURSE NUMBER	CREDITS	COURSE TITLE
Approved Electives	30	30-39 hours
MATH 1111	3	College Algebra
SAFE 4035	3	Occupational Risk Management
SAFE 3430	3	Industrial Hazard Control
PHYS 1104	4	Introduction to the Sciences: Physics
CTE 3060	3	Technical Writing
SAFE 4000	3	Ergonomics in Safety and Health
SAFE 3070	3	Safety Leadership
CHEM 1104	4	Introduction to the Sciences: Chemistry
SAFE 4940	3	Statistical Analysis for Risk Management
SAFE 4445	3	Water Quality and Waste Water Management
SAFE 4560	3	Systems Safety
SAFE 4435	3	Environmental Compliance
SAFE 3120	3	Industrial Hygiene
SAFE 4450	3	Environmental Remediation
PHYS 1103	3	Introduction to the Sciences: Physics OR
SAFE 4055	3	Safety Capstone Experience
SAFE 4425	3	Safety and Health Legislation and Standards OR



## New Program Report

SAFE 4440	3	Environmental Air Quality and Pollution Prevention
SAFE 4005	3	Environmental, Health, and Safety Risk Assessment
CHEM 1103	3	Introduction to the Sciences: Chemistry OR

**Free Elective Credits:**

9

**Internship or other Capstone Experience:**

SAFE 4055 capstone course

**Assurances**

I certify that the program is clearly within the institution's CBHE-approved mission. The proposed new program must be consistent with the institutional mission, as well as the principal planning priorities of the public institution, as set forth in the public institution's approved plan or plan update.

I certify that the program will be offered within the proposing institution's main campus, CBHE-approved service region or CBHE-approved off-site location.

I certify that the program will not unnecessarily duplicate an existing program within the geographically applicable area.

I certify that the program will build upon existing programs and faculty expertise.

I certify that the program can be launched with minimal expense and falls within the institution's current operating budget.

I certify that the institution has conducted research on the feasibility of the proposal and it is likely the program will be successful. Institutions' decision to implement a program shall be based upon demand and/or need for the program in terms of meeting present and future needs of the locale, state, and nation based upon societal needs, and/or student needs.

**Contact Information**

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## Research Update: Market Viability of an Online Safety Science Degree Completion Program

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### Methodology

**Methodology:** Unless stated otherwise, this report includes data from online job postings from June 1, 2015 to May 31, 2016. The Forum identified the top titles and skills nationwide for individuals with bachelor's-level education and safety science skills (e.g., 'occupational health and safety,' 'environmental health and safety,' 'industrial hygiene').

### Burning Glass Labor/Insight™

#### **EAB's Partner for Real-Time Labor Market Data**

This report includes data made available through EAB's partnership with Burning Glass Technologies, a Boston-based leader in human capital data analytics. Burning Glass Technologies specializes in the use of web spidering technology to mine more than 80 million online job postings and analyze real-time employer demand. Under this partnership, EAB may use Burning Glass's proprietary Labor/Insight™ tool to answer member questions about employer demand for educational requirements, job titles, and competencies over time, as well as by geography. The tool considers job postings "unspecified" for a skill, industry, employer, geography, certification, or educational requirement when the job posting did not advertise for one of these particular job characteristics. Unspecified postings represent null values and should be excluded from the total number (n value) of job postings analyzed in the query. A more complete description of the tool is available at <http://www.burning-glass.com/products/laborinsight-market-analysis/>.

For more information about the Labor/Insight™ tool, please contact Betsy Denious, Director of Business Development Learning and Policy at [bdenious@burning-glass.com](mailto:bdenious@burning-glass.com) or 301-525-6596.

## Trends over Time

### Offer an Online Safety Science Degree Completion Program to Meet Projected Employment Growth

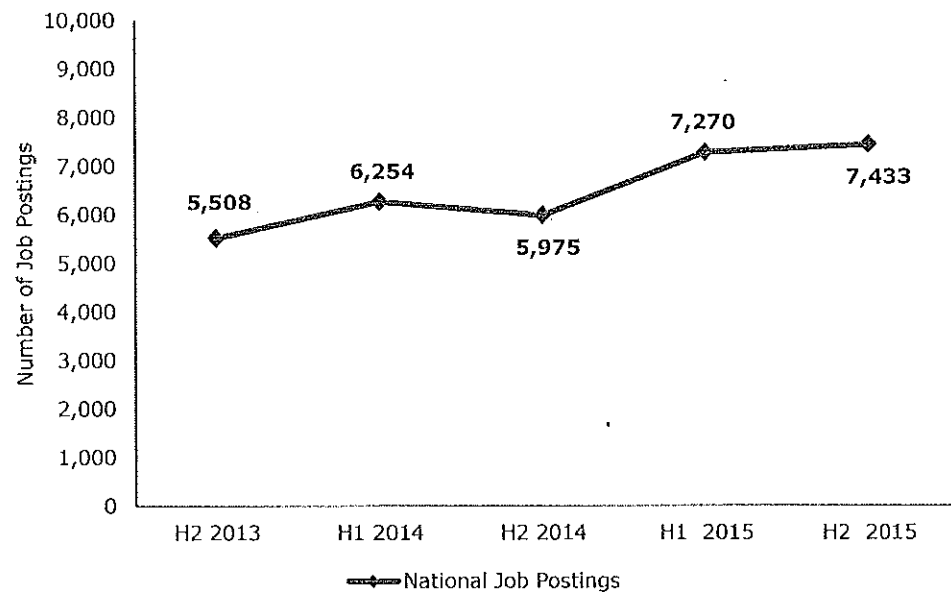
Recent growth in national employer demand for bachelor's-level safety science professionals presents an opportunity for administrators at the **University of Central Missouri** to offer an online degree completion program. National employer demand for bachelor's-level safety science professionals increased 19 percent from H2 2013 to H2 2015.

The Bureau of Labor Statistics (BLS) projects employment of "occupational health and safety technicians" and "environmental science and health protection technicians" occupations will increase by nine percent between 2014 and 2024, compared to a seven percent average increase for all occupations.<sup>1</sup>

An online modality may allow the **University of Central Missouri** to reach a wider audience of safety science professionals who seek bachelor's-level credentials. Administrators at **Boise State University** note a recent increase in demand for online degree completion programs.

### Historic Employer Demand for Bachelor's-Level Safety Science Professionals

July 2013-December 2015, National Data<sup>2</sup>



1) Bureau of Labor Statistics

2) Burning-Glass Labor/Insight™.

## Skills in High Demand

### Supplement Hard Sciences Coursework with Required Experiential Learning to Confer High-Demand Skills

Employers seek bachelor's-level safety science professionals with hard science skills (e.g., 'chemistry,' 'biology') and with safety science skills (e.g., 'occupational health and safety,' 'environmental health and safety,' 'inspection'). Employers also seek professionals with business administration skills (e.g., 'project management,' 'supervisory skills,' 'budgeting'). Contacts at the **University of Findlay** identify hard science skills as critical background for safety science coursework.

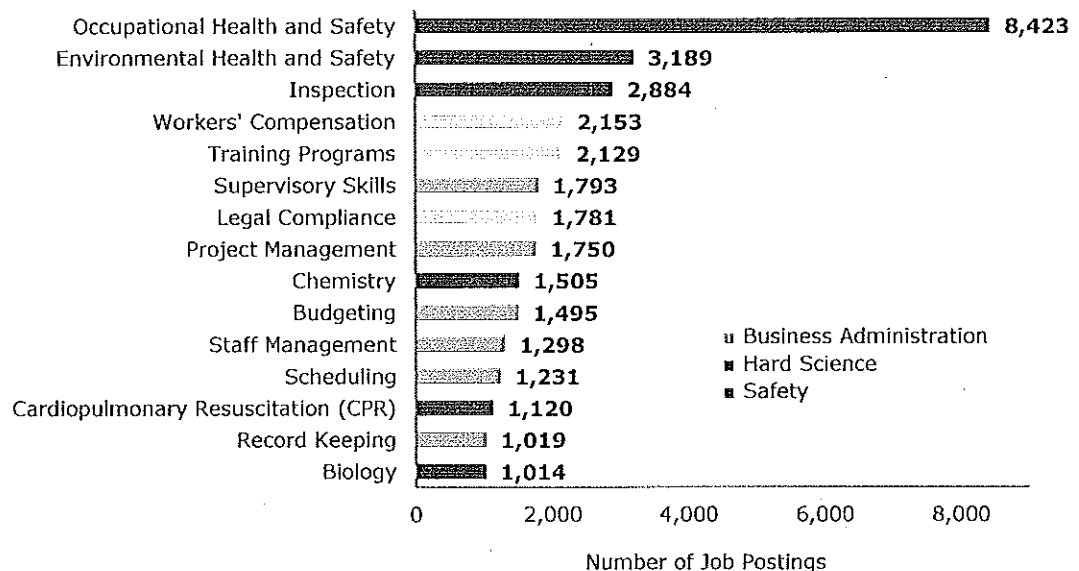
Require students to complete experiential learning curricular components (e.g., internships, co-ops) to confer in-demand safety science and business administration skills. Work with online students to identify accessible hands-on learning opportunities at nearby organizations (e.g., community colleges, businesses). Contacts at the University of Findlay help students find nearby facilities to develop practical safety science skills, such as hazardous waste site training and sediment sampling training. Students at the University of Findlay may receive up to six academic credits for internships.

Administrators at **North Carolina A&T State University** require students to complete at least one co-op or internship to gain 500-700 hours of practical experience. Contacts at the University work with military students to pair them with a military division related to safety science. Leaders at North Carolina A&T State University report 20 to 25 percent of online students identify as members of the military.

### Top Skills for Bachelor's-Level Safety Science Professionals

June 2015-May 2016, National Data<sup>3</sup>

n= 14,419 job postings, 709 unspecified postings



3) Burning-Glass Labor/Insight™.

## Potential Jobs for Graduates

### Employers Seek Bachelor's-Level Safety Science Professionals for Specialist and Managerial Roles

Employers express demand for bachelor's-level safety science professionals to fill specialist roles (e.g., 'safety specialist,' 'environmental specialist,' 'occupational health and safety specialist') more frequently than technician roles (e.g., 'safety technician').

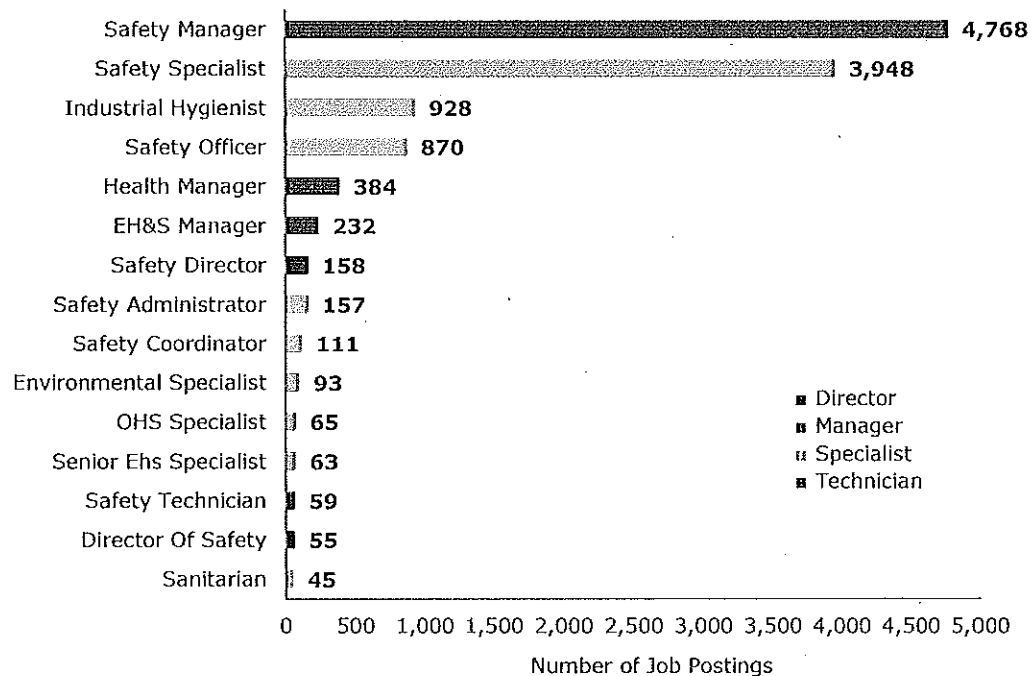
In addition to specialist roles, employers seek bachelor's-level safety science professionals for managerial positions (e.g., 'safety manager,' 'health manager,' 'environmental health and safety manager'). Employers also seek bachelor's-level safety science professionals for director (e.g., 'safety director') roles.

Among safety science subfields, employers seek bachelor's-level safety science professionals for industrial hygienist roles. Contacts at the **University of Findlay** report students identify industrial hygiene as the most lucrative safety science subfield.

### Top Titles for Bachelor's-Level Safety Science Professionals

June 2015-May 2016, National Data<sup>4</sup>

n= 14,419 job postings, 0 unspecified postings



4) Burning-Glass Labor/Insight™.



### **Partner with Associate's-Level Programs to Secure Enrollments**

Safety science administrators at the **University of Central Missouri** should work alongside designated enrollment staff to develop articulation agreements with community colleges. **University of Findlay** enrollment management staff facilitate articulation agreements with out-of-state community programs, while safety science faculty approach in-state associate's-level programs directly.

Contacts at **North Carolina A&T State University** and the University of Findlay partner with in- and out-of-state community colleges. Administrators at both institutions report an increased focus on articulation agreements in recent years. For more information on how to develop successful community college partnerships, please see our research on articulation agreement [launch](#) and [execution](#).



### **Recruit International Students from Community Colleges to Increase International Representation**

Consider partnerships with two-year institutions with large international student populations. Contacts at the **University of Findlay** identify growing interest among students from China and South Korea as these countries reassess environmental and worker safety regulations. Administrators at the University partner with two community colleges on the West Coast to target students from Asia. Leaders also plan to bolster international interest in the program via 3+1 agreements with Chinese and South Korean universities.

BS Environmental, Safety & Risk Management  
degree completion program - requires AA or AAS degree

<b>Required Core Courses</b>	<b>39</b>
SAFE 3070 Safety Leadership	3
SAFE 3120 Industrial Hygiene	3
SAFE 3430 Industrial Hazard Control	3
SAFE 4000 Ergonomics in Safety and Health	3
SAFE 4035 Occupational Risk Management	3
SAFE 4055 Safety Capstone Experience	3
SAFE 4425 Safety and Health Legislation and Standards OR	
SAFE 4435 Environmental Compliance	3
SAFE 4440 Environmental Air Quality and Pollution Prevention	3
SAFE 4445 Water Quality and Waste Water Management	3
SAFE 4450 Environmental Remediation	3
SAFE 4560 Systems Safety	3
SAFE 4940 Statistical Analysis for Risk Management	3
SAFE 4005 Environmental, Health, and Safety Risk Assessment	3

Students must have a science with a lab to meet general education requirements, but the lab does not need to be in chemistry or physics if transferring in another science with a lab. Students select CHEM 1103 OR CHEM 1104; and PHYS 1103 OR Phys 1104. Students are required to earn a C or better in all of the required general education courses (chemistry, physics, technical writing, and college algebra).

<b>Required General Education Courses - must earn a C or better in these courses</b>	<b>13</b>
CHEM 1103 Introduction to the Sciences: Chemistry OR	
CHEM 1104 Introduction to the Sciences: Chemistry	3 - 4
PHYS 1103 Introduction to the Sciences: Physics OR	
PHYS 1104 Introduction to the Sciences: Physics	3 - 4
CTE 3060 Technical Writing	3
MATH 1111 College Algebra	3

**Other General Education Courses (must meet university requirements of 42 hours)** 29

**Approved Electives** 30 - 39

SAFE 3005 Introduction to Environmental, Health, and Safety 3  
*SAFE 3005 is a required course for all non-safety associate's degrees.*

Additional approved science, math, SAFE course work. 0 - 15

Approved transfer courses from AA or AAS degree  
Up to 21 hours of courses unrelated to EHS, the equivalent of a minor.  
OR 0 - 21  
Up to 30 hours of approved EHS and EHS related courses 0 - 30

Approved OSHA training electives. Up to 9 hours in this category, other requirements apply. 0 - 9

Approved Work Experience/certification. Up to 15 hours in this category.

Demonstrated by the following BCSP certifications: 0-15

ASP eligibility 3

ASP in good standing 9

OSHT or CHST in good standing (only 1) 6

CSP in good standing 15

**Free Electives** (*varies based on number of approved electives above*) 0 - 9

**Total minimum hours** 120

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degree completion program - requires AA or AAS degree

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SAFE 4035 Occupational Risk Management	3
SAFE 4055 Safety Capstone Experience	3
SAFE 4425 Safety and Health Legislation and Standards OR	
SAFE 4435 Environmental Compliance	3
SAFE 4440 Environmental Air Quality and Pollution Prevention	3
SAFE 4445 Water Quality and Waste Water Management	3
SAFE 4450 Environmental Remediation	3
SAFE 4560 Systems Safety	3
SAFE 4940 Statistical Analysis for Risk Management	3
SAFE 4005 Environmental, Health, and Safety Risk Assessment	3

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MATH 1111 College Algebra	3

**Other General Education Courses (must meet university requirements of 42 hours)** **29**

**Approved Electives** **30 - 39**

SAFE 3005 Introduction to Environmental, Health, and Safety	3
<i>SAFE 3005 is a required course for all non-safety associate's degrees.</i>	
Additional approved science, math, SAFE course work.	0 - 15
Approved transfer courses from AA or AAS degree	
Up to 21 hours of courses unrelated to EHS, the equivalent of a minor.	
OR	0 - 21
Up to 30 hours of approved EHS and EHS related courses	0 - 30

Approved OSHA training electives. Up to 9 hours in this category, other requirements apply.	0 - 9
Approved Work Experience/certification. Up to 15 hours in this category. Demonstrated by the following BCSP certifications:	0-15
ASP eligibility	3
ASP in good standing	9
OSHT or CHST in good standing (only 1)	6
CSP in good standing	15
<b>Free Electives</b> ( <i>varies based on number of approved electives above</i> )	0 - 9
<b>Total minimum hours</b>	120