

Safety-II Perspective of Safety Science Educational Standards in the United States

A 15-minute presentation followed by 15 minutes of discussion and brainstorming

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Our Team

ABET

Accreditation
Board for
Engineering and
Technology

Background

General Criteria
(Applied Science)

Program Specific Criteria
(Occupational Safety)

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Our Problem and Potential Incremental Impact

Standards for academic occupational safety programs are focused on technical, reactive, and legal educational outcomes (Safety-I).

The Safety-II or “new” view of safety science is not integrated into the educational standards.

To transform the profession from solely Safety-I to include Safety-II we need to go upstream and reframe how we engage and educate new OSH professionals.

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Our Assumptions & Challenges

- Academia exists to constructively challenge industry and move practice forward.
- Safety science studies two main categories of things - accidents and work (Rae et al., 2020).
- Education should focus on 'the safety of work' rather than 'safety work' (Rae and Provan, 2019).
- Education and training pathways will need to provide these critical capabilities, associated competencies, and practical development experiences (Pryor et al., 2021).
- Diffusion of Safety-II theories/practice into academia is a "wicked" problem and therefore must embrace emerging complex system understanding.

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Our Approach

Initial Group meeting

Round 1, modified Delphi approach

More group meetings (n=3)

Safety job description analysis

Round 2, modified Delphi approach

Review possible educational standard revisions

Group meeting to solidify revisions

Report here today and seek **YOUR** input/discussion

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Job Description Analysis

On August 15, 2021, there were 1,273 jobs on ASSP's Career Center job search website.

We searched the jobs for the phrases "Safety-II", "Safety II", "Safety Differently", "HOP", "Human and Organizational Performance", "Human & Organizational Performance", "New View", and "Resilience Engineering" on all 1,273 jobs.

Only 6 job descriptions were found all with mentions of "Human and Organizational Performance", or "HOP".

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Delphi Results

Focusing on revised educational standards

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Anticipation recognition, evaluation, and control of hazards and exposures impacting people, property and the environment

Principles and practices of risk management and business justification

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Anticipation recognition, evaluation, and control of hazards and exposures impacting people, property and the environment

Anticipation, recognition, evaluation, and control of hazards and exposures impacting people, property, and the environment within the context of work processes and systems

Principles and practices of risk management and business justification

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Anticipation recognition, evaluation, and control of hazards and exposures impacting people, property and the environment	Anticipation, recognition, evaluation, and control of hazards and exposures impacting people, property, and the environment within the context of work processes and systems
Principles and practices of risk management and business justification	Principles and practices of risk management and business justification, their tradeoffs and goal conflicts.

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Legal principles relevant to safety profession
Development of policies, procedures, and systems using research and evidence-based data
Principles and practices of continuous quality improvement and sustainable safety programs and management systems

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Legal principles relevant to safety profession	Ethical, social, and legal principles relevant to safety profession
Development of policies, procedures, and systems using research and evidence-based data	
Principles and practices of continuous quality improvement and sustainable safety programs and management systems	
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Legal principles relevant to safety profession	Ethical, social, and legal principles relevant to safety profession
Development of policies, procedures, and systems using research and evidence-based data	Development, sustainment, and continual improvement of occupational health and safety management systems and interventions using research and evidence-based data
Principles and practices of continuous quality improvement and sustainable safety programs and management systems	
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<p>Root cause analysis, incident investigation, and acceptable risk causation and relative risk</p> <p>Safety data analysis, interpretation and utilization of statistical and epidemiological principles; and trends of injuries, illnesses and workplace incidents</p>	<p>15</p>
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<p>Root cause analysis, incident investigation, and acceptable risk causation and relative risk</p> <p>Safety data analysis, interpretation and utilization of statistical and epidemiological principles; and trends of injuries, illnesses and workplace incidents</p>	<p>Methods that seek to understand risk and learn from the systems of everyday work and incidents</p>	<p>16</p>
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<p>Root cause analysis, incident investigation, and acceptable risk causation and relative risk</p>	<p>Methods that seek to understand risk and learn from the systems of everyday work and incidents</p>
<p>Safety data analysis, interpretation and utilization of statistical and epidemiological principles; and trends of injuries, illnesses and workplace incidents</p>	<p>Qualitative and quantitative data analysis, including the interpretation and utilization of statistical and epidemiological principles, trends of injuries, illnesses and workplace incidents, and work as done within the context of the system</p>

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<p>Applications of adult learning theory and behavior change to safety and health training methodology</p> <p>Leadership and organizational behavior</p> <p>Culminating senior project/capstone</p>

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Applications of adult learning theory and behavior change to safety and health training methodology	Applications of adult learning theory and systems thinking to safety and health interventions
Leadership and organizational behavior	
Culminating senior project/capstone	
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Applications of adult learning theory and behavior change to safety and health training methodology	Applications of adult learning theory and systems thinking to safety and health interventions
Leadership and organizational behavior	Leadership, organizational, complexity, systems, and safety science theories
Culminating senior project/capstone	
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Applications of adult learning theory and behavior change to safety and health training methodology

Applications of adult learning theory and systems thinking to safety and health interventions

Leadership and organizational behavior

Leadership, organizational, complexity, systems, and safety science theories

Culminating senior project/capstone

Culminating project/capstone experience integrating theory and practice

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Where to from here?



We want your feedback and engagement during the conference



More writing about the background and rationale for our project.



A few more group meetings



A position paper; possible submission to *Safety Science*

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Conservation Starters for the Conference Participants

- Why do you feel this endeavour is necessary?
- What's new that makes it necessary?
- Should we even have a safety science curriculum in higher education?
- Does a distinct safety science curriculum in higher education specialising students *to the point they have limited other career options* and also impede *Synesis*?

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Conservation Starters for the Conference Participants

- Is 'safety' even a suitable component to put into a 'safety-II' curriculum or should we be focusing in other areas?
- If the above is a 'yes', what do attendees think the key ideas, terms, concepts, etc. for embedding Safety-II into curriculum should be?
- Is there a better term for this than "safety?"
- Ideas for what's next?

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Thank you

- We would appreciate your feedback now and in the future!

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