

MINERVA ONLINE UNIVERSITY ENGINEERING STUDENT CERTIFICATE PROGRAM IN HEALTH AND SAFETY

1. The compelling reasons for a Minerva Certification Program:

- a) Provides assurance that Canadian Engineering Accreditation Board (CEAB) student attribute requirements for 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.8, 3.1.9, 3.1.10, 3.1.11, and 3.1.12 are being partially or fully addressed.
- b) Provides a basis for advancing Health and Safety knowledge and skills for students enrolled in University Engineering Schools
- c) Provides a basis for defining minimum industry knowledge requirements in Health and Safety from university graduates being hired.
- d) Provides added credentials for student resumes.
- e) Educators are asking for certification to overcome curriculum workload.
- f) The greater majority of educators remain uncomfortable teaching Health and Safety even when content is provided to them.
- g) CEAB assessment standards remain non-prescriptive when assessing the completeness of safety, risk management content in the curriculum.

2. Key Domains for Health and Safety Engineering Student Competencies in all Disciplines

- a) Applied Safety Fundamentals
- b) Hazard Analysis and Risk Management
- c) Law, Ethics and Professional Responsibility
- d) Safety Management, Leadership, Systems, Culture and Audits
- e) Occupational Hygiene
- f) Personal Safety, Health and Wellness
- g) Ergonomics and Human Factors
- h) Designing for Safety

3. Scope of the Minerva Online Program

The online program will contain 4 modules of 6 hours each complete with assignments and quizzes. It will address the CEAB requirements for Engineering Schools. Learning

objectives will be defined for each module. The content material will be taken from Minerva's 26 Teaching Modules for the four online modules with added material provided to address some of the topics. The material covered in each of the four modules will contain core material for all students as well as discipline specific content for a certain engineering discipline. It's estimated that core material may represent approximately 75% of total training hours.

A "white paper" has been established by Minerva Canada that defines desired student competencies for each of the above 8 domains as well as an overview of the content that will be covered in each of the 4 modules. It is recognized that these competencies and content will need to be modified when the online program is extended to students in other Faculties (e.g. Business etc)

4. Thirteen Minerva University Partners to Date

Dalhousie University
University of Prince Edward Island
Concordia University
University of Ottawa
Queen's University
University of Toronto
Ryerson University

York University
Western University
Laurentian University
University of Saskatchewan
University of Calgary
University of British Columbia

5. Online Program Designer

University of Fredericton

6. Certificate Program Features

1. All 4 online modules will be owned by Minerva and developed by the University of Fredericton, a third party supplier it will use and which has a proven track record for providing e-learning training to academia and industry. It will incorporate an intuitive interface design and incorporate all pertinent material from Minerva's Teaching modules, other H&S training material and complete with review questions, case studies and other assignments, quizzes.
2. Universities will decide on whether the certificate program is mandatory and integrated into existing courses or treated as an elective course.
3. Universities will decide on whether the certificate program will be hosted on the university's Learning Management System (LMS) or hosted on a Minerva branded Learning Management System by the University of Fredericton
4. Universities will decide on the specific timing to implement each of the four modules but will be done in sequence, starting with Module 1.

5. An annual licensing fee will be paid by the university to Minerva Canada and will be based on the choices selected in item 3 above. Universities must subscribe to the Minerva program for engineering students to access the online certification.
6. Certificate program content shall meet all needed CEAB requirements. Program content shall address all 8 domains listed in section 2.
7. Majority of the online program's content will be based on Minerva's Teaching Modules. Minerva may request some assistance for developing the online content from authors of its Teaching Modules.
8. The Certificate online program content will contain approximately 24 hours of online training excluding time to complete assignments. It will contain core material applicable for all engineering disciplines as well as content specific to various engineering disciplines. It's estimated that core material may represent about 75% of the total training hours.
9. Some program content may be obtained externally from some universities, provincial governments, H & S associations, etc.
10. Minerva will be responsible for updating any needed program content and/or providing new content. The licensing fees will be used in part for this purpose.
11. University partners will be asked to test each of the four modules with students before they are finalized.
12. Overall administration, hosting and issuance of any certificate will depend on whether the program is hosted on a university LMS or by using Minerva's branded LMS. If hosted on a university LMS, Minerva's third party supplier will assist the university to upload all necessary files. If hosted on the Minerva branded LMS, all pertinent statistics can be provided to the universities on their students enrolled in the program. For those using the Minerva LMS, the third party supplier will provide any needed technical support. Minerva plans no instructor support. Universities can determine what support can be provided to student questions on module content issues. Students with accessibility issues will be addressed by the third party supplier.
13. Minerva will be responsible to secure government and industry funding for the development of the certificate program. Each university partner has provided one-time seed funding of \$5,000 to cover initial development costs for Module 1.
14. Minerva anticipates offering this program in 2019 to Canadian colleges