

## **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.
- h) It provides a venue for Minerva sponsors to train their employees.

### **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 courses of approximately 6 hours each complete with assignments and quizzes. Each course will contain several modules that address one or more of the above domains. It will address the CEAB requirements for Engineering Schools. Learning objectives and the CEAB requirements being addressed will be defined for each module. The content material will be taken from Minerva's 24 Teaching Modules for the four online courses with added material provided to address some of the topics. The material covered in each of the four courses 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 prepared 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 courses. 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. Minerva's initial University Partners**

Dalhousie University

University of Prince Edward Island

Concordia University

University of Ottawa

Queen's University

University of Toronto

York University

Ryerson University

Laurentian University

Western University

University of Saskatchewan

University of Calgary

### **5. Online Program Designer**

University of Fredericton

### **6. Certificate Program Features**

1. All 4 online courses 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 they choose to take individual modules or all modules and courses as part of a certificate program. They will also decide if the modules and courses are mandatory or treated as an elective course. If they decide to proceed with a certificate program, courses must be taken in sequence (i.e. course 100 before course 200 etc)

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 through a third party hosting supplier (Remote Learner). Minerva is recommending universities to access the modules through their own LMS as it will involve less administration work ( to set up registration for each student, handle any student requests) as well as less cost to access the modules.
4. Universities will decide on implementation timing.
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 modules.
6. Certificate program and modules content shall meet all needed CEAB requirements. Each module will address one or more of the CEAB attributes and have a student grade. 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, quizzes. 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, courses and modules. The licensing fees will be used in part for this purpose.
11. University partners will be asked to test each of the four courses 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 the Minerva branded LMS through Minerva's hosting provider, universities can access all pertinent statistics, status of completion, and grades etc. on their students enrolled in the program. For those using the Minerva LMS, the university will need to appoint an administrator and be the point of contact with the Minerva's hosting provider to provide student information for

registration, and for advising them on any technical issues. Minerva plans no instructor support. Universities will need to determine how to deal with student questions on module content issues. If hosted on a university LMS, the University of Fredericton will assist the university if necessary to upload all necessary files under a separate contract between the university and the University of Fredericton and will be done annually to reflect new file updates. Students with accessibility issues will be addressed in the design of the Minerva LMS.

13. Minerva will be responsible to secure government and industry funding for the development of the certificate program. Minerva's initial university partners have each provided one-time seed funding of \$5,000 to cover initial development costs for Course 100.
14. Minerva anticipates offering this program in 2021 to Canadian colleges and other universities.

## **7. Minerva Sponsorship Funding Requirements**

Minerva has initiated a sponsorship campaign among its industry, government, and professional association sponsors in the Fall 2018 to raise \$450,000 needed in the development of the four online modules. Sponsors will be given access to the online program for a certain number of employees based on the level of sponsorship.