

An Innovative Solution to Enhancing the Mining Curriculum

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Contents

1. Introduction
2. University-Industry Collaboration
3. An e-learning Solution
4. Conclusion



Introduction



Introduction

Mining School Challenges

- Shortage of qualified faculty
- Limited availability of industry specialists



Mining School Challenges

Hiring Requirements Forecast in Canada:



At least 100,000
professionals

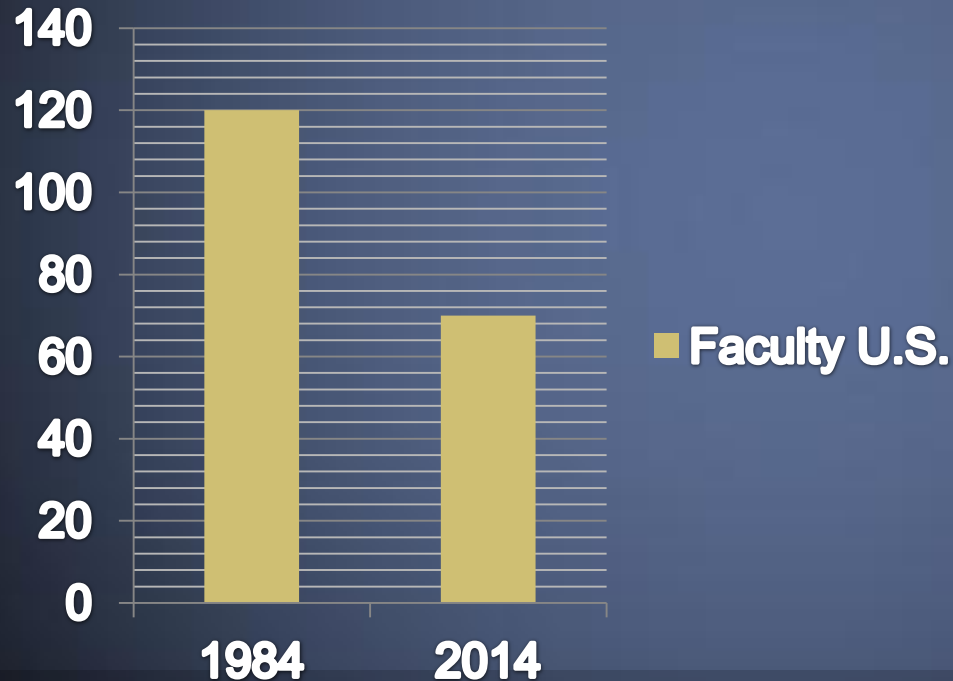


Year
2024

(Source: MiHR 2014)



Mining School Challenges



Faculty in the
U.S.



Down about
40% in the
last 30 years

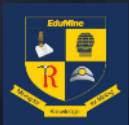
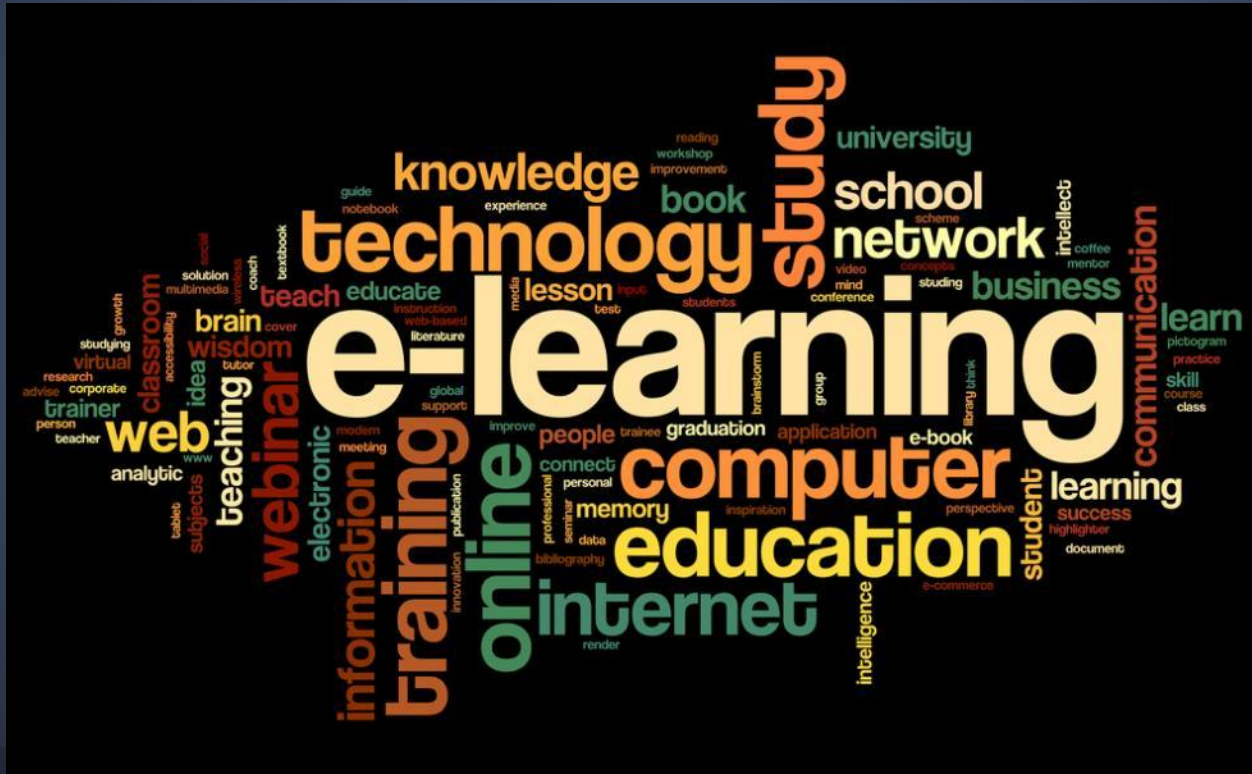
(Source: SME 2014)



University-Industry Collaboration



University-Industry Collaboration



University-Industry Collaboration



Fill curriculum gaps



University-Industry Collaboration



Accessible

University-Industry Collaboration



Accredited



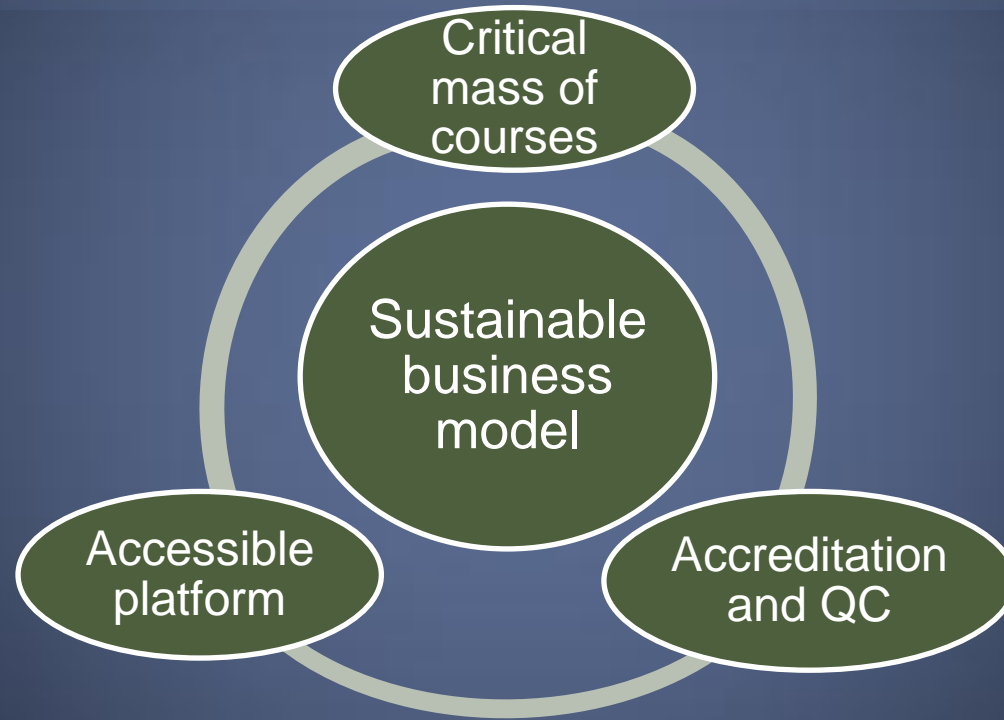
University-Industry Collaboration



Sustainable



University-Industry Collaboration



An e-learning Solution



An e-Learning Solution

EduMine

Over 160 courses

Fill gaps in the curriculum





Online Courses for Mining and Geoscience

Online courses on mining, mining engineering and geoscience topics offered by EduMine.

Displaying 164 Matching Results

Sort by: Course Title: A to Z

Items per page: 50

-  **360° Mining**
Online Course | Self Paced
-  **Acid Rock Drainage Prediction** **REVISED**
Online Course | Self Paced
-  **Advanced Coal Preparation**
Online Course | Self Paced
-  **Air Photo Interpretation 1 - Fundamentals**
Online Course | Self Paced



An e-Learning Solution

Synchronous



Asynchronous



An e-Learning Solution

 Online Course

An Introduction to Mining and Mineral Processing

Part 1: Geological Concepts

[Definitions and Basic Geology ...](#) | [Ore Deposits ...](#) | [Coal and Diamond Deposits ...](#) | [Deposits Formed by Weathering ...](#) | [Exploration Methods ...](#) | [Review #1 ...](#)

Formation of Ore Deposits

Session Headings:

The Rock Cycle

There are many physical and chemical cycles that occur in the earth (e.g. hydrologic cycle, carbon cycle). The rock cycle is illustrated in Figure 1 (right).

In the rock cycle there are three types of rock: igneous, sedimentary, and metamorphic.

Igneous rocks are formed when rock melts at temperatures between 600 and 1200°C. The melt is called *magma* if it stays within the earth; if it exits the earth, as in a volcano, it is called *lava*. Melted rock is light and will flow toward the surface where, if it solidifies within the earth, it is called an intrusive igneous rock (or simply an intrusion) and, if it exits the earth (e.g. a volcano), it solidifies very quickly and is called an extrusive igneous rock.



The combination of uplift and erosion exposes the igneous rock to the elements where it weathers to become sediment particles transported in rivers and streams. (It could also become a soil.) Eventually it reaches a large water body such as a lake or ocean where it deposits in layers. The weight of successive layers and chemical binding of the particles combine to form a sedimentary rock.

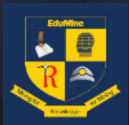
An example of a sedimentary rock formation is shown in Figure 3 (right). The formation represents millions of years of

Online course
(asynchronous)

Lightweight platform

Remote locations

Ideal for FIFO



An e-Learning Solution



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[Last Visited](#)
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Q2. Which inter-related processes are involved in producing ARD? (select one or more)

- ☐ acid generation from the oxidation of iron sulphide minerals
- ☐ heavy metal solubilization (metal leaching) caused by ferric iron
- ☒ acid generation from contact with basic minerals (such as calcite) ... [Learn more](#)
- ☐ acceleration of these processes by bacterial activity?

Q3. Are ARD and metal leaching separate, unrelated processes?

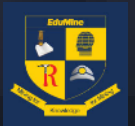
- ☒ Yes ... [Learn more](#)
- ☐ No

Q4. Climatic factors have significant influence on ARD generation.

- ☒ True?
- ☐ False?

Review questions

Certification



An e-Learning Solution



Accreditation and QC

Review Board

IACET



An e-Learning Solution

Sustainable business model



40% Revenue



Royalties



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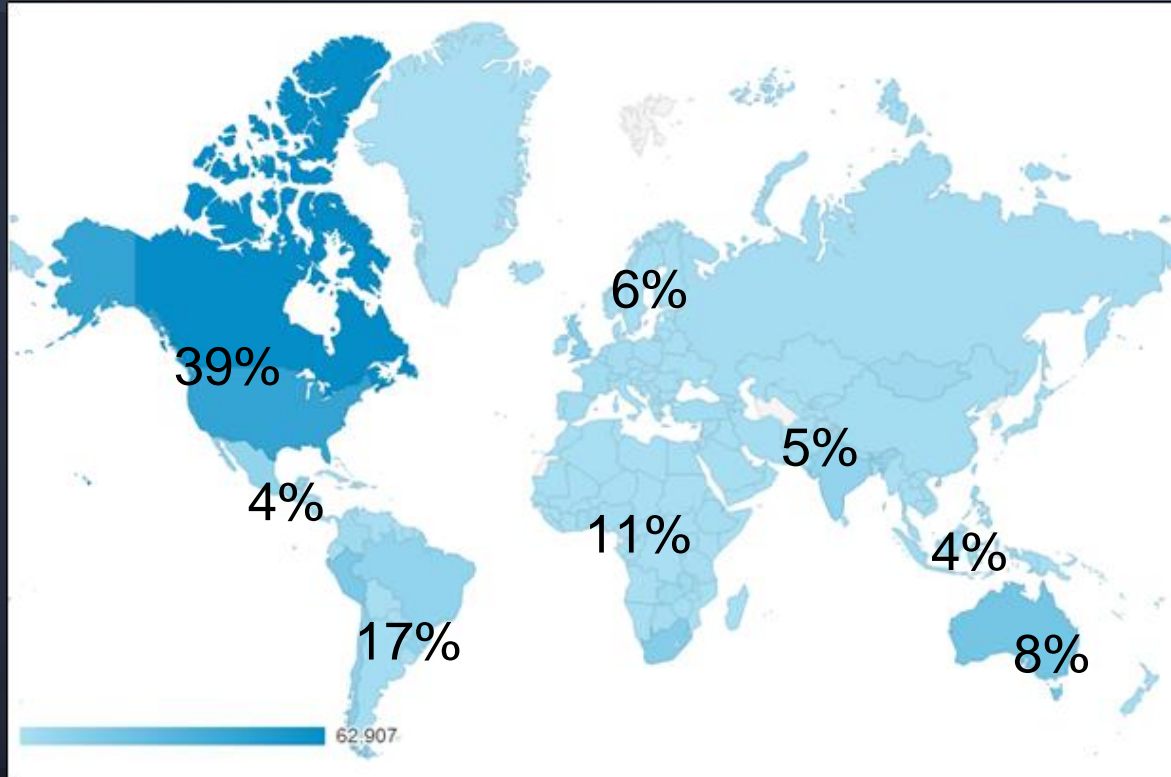


23
universities

12
countries

since 2006

An e-Learning Solution



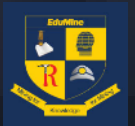
EduMine Presence

Visitors:

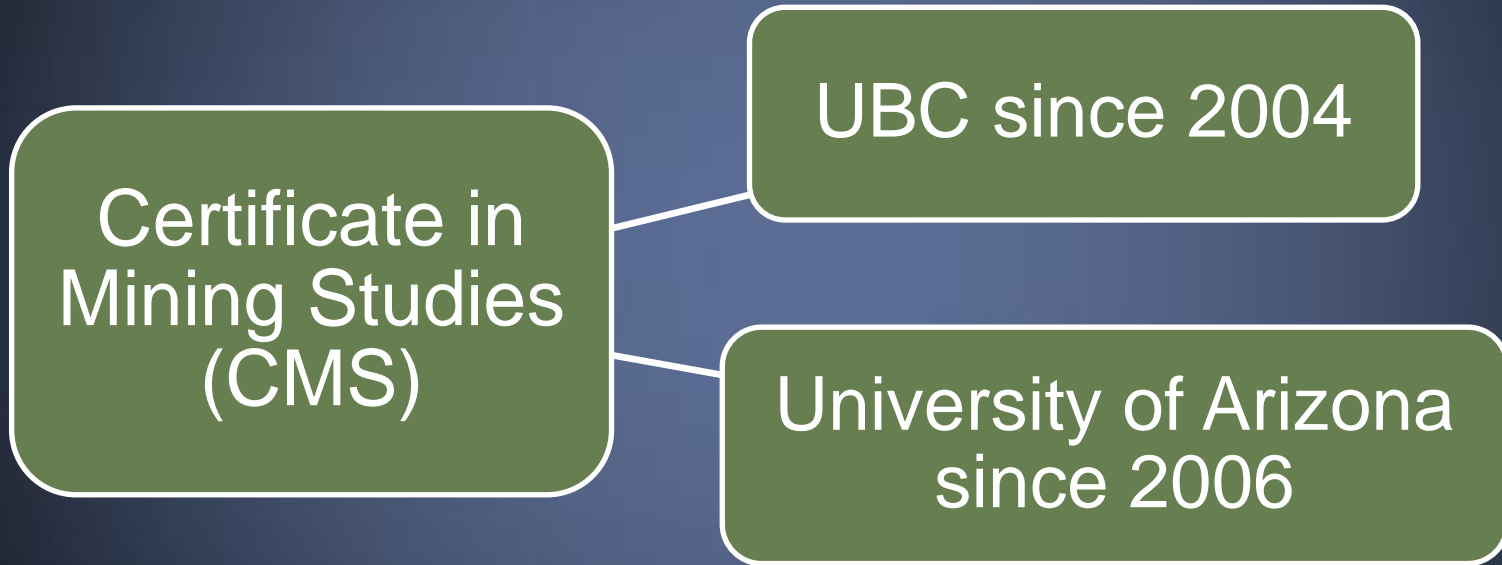
60%

from the Americas

Source: Google Analytics.
Feb 2013 - Jan 2014



An e-Learning Solution



An e-Learning Solution

CMS
participants:

- career objectives
- CMS requirements
- accessibility and availability

CMS
program:

- tailored
- several streams
- different providers



An e-Learning Solution

Exploration

Geotechnics –
Rock
Mechanics

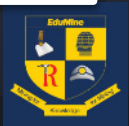
Environment –
Communities

Health –
Safety –
HR

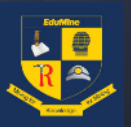
Mining
Methods

Management

Mineralogy



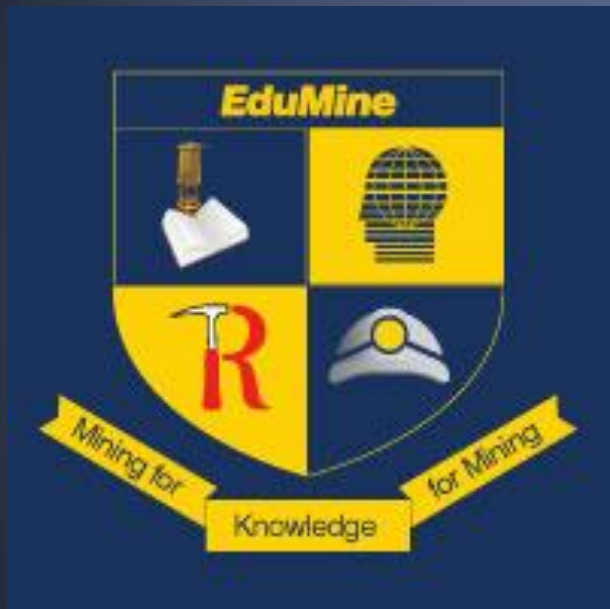
Conclusion



Conclusion

What's next?

An e-Learning Solution



Thank you.

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