Sevim, H.; Honaker, R.
REVIEW OF THE EVOLUTION OF MINING ENGINEERING CURRICULUM IN THE US
Universidad Nacional de Colombia
Medellín, Colombia

Available in: http://www.redalyc.org/articulo.oa?id=49624953001

Dyna,
ISSN (Printed Version): 0012-7353
dyna@unalmed.edu.co
Universidad Nacional de Colombia
Colombia

How to cite | Complete issue | More information about this article | Journal's homepage

www.redalyc.org
Non-Profit Academic Project, developed under the Open Acces Initiative
Mining engineering curriculum has been discussed and debated in meetings and conferences, and opinions and recommendations have been published in the literature since the inception of the official degree-granting mining engineering program at the Columbia School of Mines in 1864. The deliberations have usually been heightened during the periods of boom-and-bust cycles experienced by the mining industry since the 1920s.

Currently, the global natural resource industry is undergoing another cycle, called ‘super cycle,’ characterized by elevated prices for metals and other natural resources. The super cycle is occurring as a result of the large deficit between the global supply and demand for natural resources, due, in large part, to economic expansion and development in countries such as China, India and Brazil. Because of this cycle, there is a shortage of mining engineers in the U.S., Canada and Australia.

It is noted that, while countries like the U.S., Canada and Australia struggle with a shortage of enrollment and qualified mining engineers, other countries and regions around the world, such as China, India and South America have either balanced supply and demand, or in some cases oversupply.

With the increased demand for mining engineering graduates comes an opportunity to reshape the mining engineering curriculum to meet the current and future demands of practicing engineers within the natural resource extraction industry. In this regard, it is beneficial to review the past curriculum development to provide a clearer picture of the future direction.

The findings through the review of select publications regarding the evolution of the mining engineering curriculum over the last century can be summarized as follows:

- The need to improve communication skills has been continuously mentioned by industry and academia.
- Curricula developed before the 1950s emphasized math and science. Computer applications, management and environmental concepts dominated the curricular changes after the 1970s. Social, public and environmental concepts gained momentum after 2000.
- Mining engineers have been expected to be not only capable engineers, but also to be knowledgeable in management, environment, laws and public relations.
- A strong and continuous industry-academia relationship is necessary for the vitality of the profession.
- Future curricula must be adaptive to industry needs, and sufficiently interdisciplinary to accommodate societal and environmental concerns.

A final remark is that quality programs are run by quality teachers. Those states where the mining industry plays an important role must support their mining engineering programs so that these programs can produce quality teachers and quality engineers.

H. Sevim and R. Honaker
Mining Engineering October 2012 pp 27-35