

NEW MEXICO TECH OFFERS

Online-Distance Education MSc-PhD COURSE ENVIRONMENTAL GEOCHEMISTRY OF MINING ACTIVITIES, GEOC 589, EARTH 489, ME 589-1, FALL 2015

Ore deposits, especially mined and processed, are a potential environmental hazard. Exposure of fresh rock surfaces during mining, as well as the produced crushed and milled waste, will be subject to weathering processes, causing large-scale environmental damage if not sufficiently managed. Sulfide-bearing mineralization, in particular, is readily oxidized at surface, and has the potential to produce acid/neutral rock drainage (A/NRD), as well as release of heavy metals. Significant contamination of surface and groundwater may readily result from these two processes. In addition to the contamination threat, there is also a geotechnical threat to the environment; tailings dams, and waste rock piles may fail if poorly designed, mismanaged or subject to physical/geochemical weathering.

Goals: The potential environmental threat of a mine (or an un-mined mineral/ore deposit) can only be understood and managed through specific knowledge of mineralogy and geochemistry, hydrogeology, and geotechnical engineering. The course will, therefore provide students with the basic knowledge required to evaluate the potential geochemical hazard of a given property from a regulatory perspective and to understand the environmental geochemistry aspects of the existing or planned operation.

Issues to be covered:

- Introduction to hydrogeochemistry
- Introduction to ore deposits and processing
- Metal mobility
- Acid/Neutral Rock Drainage
- Prediction methods
- Pit Lake geochemistry
- Tailings / Waste rock geochemistry
- Remediation/Reclamation/Treatment

Teacher: Dr. Ingar Walder,
Associate Professor of Geochemistry

Location: NMTech, Room Cramer 123 or
Distance Education interactive
web-class

Time: Mondays
9.30-12.15
First lecture August 24
Last Lecture Nov. 30

Contact : Ingar Walder
iwalder@ees.nmt.edu

Credits: 3 crt.

Cost: distance education cost see details <http://distance.nmt.edu/tuition-and-fees.html>

Registration: registrar@admin.nmt.edu / See also registration help file



