

Syllabi Mining Engineering Licensure Examination (Draft No. 3.) Board of Mining Engineering

SCOPE

The examinees' knowledge and understanding of the concepts, principles, terminology, and the application of these concepts and principles in the solution of problems encountered in each particular subject given in the licensure examination.

SUBJECTS

A. Mine Engineering I35%

1. *Mineral prospecting and exploration* – methods and techniques, tools, instruments, equipment, mapping and map interpretation, diamond drilling, core logging, drill hole data management and analyses, geophysical and geochemical analyses, and other related topics.
2. *Mine planning, design and development* – elements of mining, mine capacity optimization, pit optimization, underground and surface development, ore haulage and handling, mining equipment sizing and selection, cost estimations, applied mathematics in mine engineering and economics, mine supports, mine drainage, report writing, and related topics.
3. *Mining methods* - surface and underground mining methods, quarrying, non-conventional methods (e.g. in situ leaching and solution mining), drilling and blasting, small scale mining and related topics.
4. *Mine ventilation, safety and health* – ventilation methods, tools and equipment, mine hazards, safety practices, rules and regulations, accident prevention, first aid, mine rescue, safety tools and equipment, safety statistics, sanitation, noise and illumination and related topics.
5. *Rock mechanics in mine engineering* - Slope stability, slope failure analyses, core analyses, rock testing, foundation analyses, slope stabilization, structural mapping, underground rock mechanics and related topics.

B. Mine Engineering II35%

1. Mine economics, valuation and feasibility studies mineral and engineering economics, basic economic principles, uses of metals and minerals, world markets, principles and quantitative analyses of time value of money, basic financial statements, cost parameters, investments related valuation criteria and principles, mine capacity optimization and related topics. Sampling principles, techniques and tools, ore reserve estimation principles and methods, conventional or geostatistical methods of orebody modeling and ore reserve estimation, production optimization, cost estimates and projections, metal prices, cut-off grades and related topics.
2. *Computer applications* - Basic electronic data processing, computerized ore reserve estimation, mine planning and production scheduling and other computer applications in mining.
3. *Mine and mineral land surveying* - Principles and calculations in geodetic and mine surveying, principles and applications of geographical positioning systems (GPS).

4. *Mining laws and ethics* - The Mining Code, Mining Engineering Law, mining right acquisitions, MPSA, pertinent laws in mining and mining engineering, applicable PRC laws, rules and regulations and the professional code of ethics.

C. Mine Engineering III30%

1. *General geology*
2. *Mineralogy and Petrology*
3. *Economic Geology*
4. *Structural geology*
5. *Principles of metallurgy*
6. *Mineral processing*
7. *Assaying*
8. *Ecology* - environmental concerns in mining such as environmental plans, EIA/EIS, ECC, mine waste and tailings management, environmental laws, rules and regulations and other related topics.

TOTAL100.00%