

Attachment C
Guidelines on Meeting the Professional Education Requirements

1. Candidate must hold a BA or BS degree in geology or related geoscience (e.g., engineering geology, geophysics, geochemistry, earth science, environmental geoscience, etc.), from an accredited college or university; and
2. Candidates for geology licensure must possess a broad understanding of college-level mathematics, physical sciences and geological sciences. Evidence for such competency must include:
 - a. At least six (6) semester hours in mathematics beyond college algebra and trigonometry such as calculus, statistics, linear algebra, differential equations or their equivalent and fifteen (15) additional semester hours in a combination of at least two of the following sciences: physics, chemistry, or biology or their equivalent; and
 - b. a minimum of thirty (30) semester hours, or the equivalent, of approved geological sciences courses**. Twenty-four (24) of the thirty semester hours, or the equivalent, must be from the following subject areas, and must include at least one course from four of eight different areas;
 - i. **Earth Materials:** The study of the structure, composition and origins of naturally occurring geological materials. Subjects that fall within this subarea include, but are not limited to: mineralogy, optical mineralogy, igneous and metamorphic petrology, petrography, geochemistry, and isotope geochemistry.
 - ii. **Sedimentary Geology:** The study of sedimentary rocks, sedimentary basins and paleoenvironments. Subjects in this subarea include, but are not limited to: sedimentology, stratigraphy, sedimentary petrography, sedimentary basin analysis, carbonate geology, marine geology, oceanography, and paleontology.
 - iii. **Geotechnology:** The study of interactions between anthropogenic activities and earth systems and the application of geological and environmental technologies. Subjects that fall within this subarea include, but are not limited to: engineering geology, geotechnical engineering, geologic or natural hazards, engineering hydrology, biogeochemistry, environmental geology, and soil or rock mechanics.
 - iv. **Surficial and Near-Surface Geology:** The study of surface deposits, landforms and landscapes and their relationship to surface and endogenic earth processes. Subjects in this subarea include, but are not limited to: geomorphology, glacial or Quaternary geology, fluvial geomorphology, and tectonic geomorphology.

- v. **Hydrogeology:** The study of the occurrence, distribution, and movement of surface and ground water, and their chemical and physical interactions. Subjects that fall within this subarea include, but are not limited to: hydrogeology (or geohydrology), surface water hydrology, aqueous geochemistry, aquifer analysis, fluid mechanics, and solute fate and transport.
- vi. **Geodynamics and Geophysics:** The study of endogenic earth processes and their relationship to plate tectonics, mountain building, earthquakes and geological structures. Subjects in this subarea include, but are not limited to: geophysics, structural geology, volcanology, seismology, and plate tectonics.
- vii. **Economic Geology:** This subject area includes the exploration, valuation, and extraction of geological materials of economic utility. Subjects in this subarea include, but are not limited to: energy and mineral resources, mining geology, ore deposits, ore microscopy, petroleum geology, petroleum geochemistry, coal petrology, and geothermal energy.
- viii. **Geological Skills/Applications:** This area includes applying geological principles and skills to analyze and interpret geological information. Subjects in this subarea include, but are not limited to: field methods, field camp, geological mapping, geological modeling, and remote geological sensing.

** Semester hours earned in geological sciences, beyond the 30 required, may be utilized to fulfill the 15 required credits of science in #2.a. above.

3. Independent study, research projects, theses or dissertations may be used to satisfy the twenty four (24) semester hour geological sciences requirement, or equivalent, only if it is a component of an approved curriculum and the applicant is awarded academic credit from an accredited college or university; and
4. Workshops, professional development, seminars, conferences, short courses, field trips, student internships, or reading courses may not be used to satisfy the thirty (30) hour geological sciences requirement, or equivalent.