

**Board of Architecture, Engineering, Land Surveying, Landscape Architecture,
Geoscience, and Interior Design**

**Proposed Permanent Rules Relating to Engineering Examination and Experience,
Land Surveying Education and Experience, and Geoscience Education and Experience**

1800.0050 DEFINITIONS.

[For text of subpart 1, see Minnesota Rules]

Subp. 1a. **Accredited institution of higher learning.** "Accredited institution of higher learning" means an educational institution accredited by one or more of the regional or national accrediting agencies or successor agencies recognized by the United States Department of Education.

[For text of subparts 2 to 14, see Minnesota Rules]

Subp. 15. **Semester credit.** "Semester credit" means the conventional United States college semester credit. Quarter credits may be converted to semester credits by multiplying them by two-thirds.

1800.2500 EDUCATION AND EXPERIENCE.

[For text of subpart 1, see Minnesota Rules]

Subp. 2. **Admission to written Fundamentals of Engineering (FE) examination.** To qualify for admission to the written FE examination, the applicant shall present evidence of one of the following:

A. completion of one of the ~~educational~~ education requirements in subpart 2a;
~~item A;~~

B. being within 48 quarter or 32 semester credits of obtaining an EAC-ABET accredited bachelor's degree;

C. completion of a minimum of 36 quarter or 24 semester credits in a graduate program in engineering where the bachelor's degree in that discipline of engineering is EAC-ABET accredited; or

D. completion of a minimum of 36 quarter or 24 semester credits toward an EAC-ABET accredited graduate degree.

Subp. 2a. **Education and experience requirements.** To qualify for certification as an engineer-in-training, admission to the written PE examination, or licensure as a professional engineer, an applicant shall present evidence of ~~meeting the educational requirements in item A. To qualify for admission to the written PE examination or licensure as a professional engineer, an applicant shall present evidence of meeting the educational and qualifying experience requirements in items A and B.~~ one of the following:

~~A. Education:~~

A. ~~(1)~~ graduation from an EAC-ABET accredited bachelor's engineering curriculum;

B. ~~(2)~~ graduation from a bachelor's engineering curriculum that receives EAC-ABET accreditation within five years of the applicant's graduation;

C. ~~(3)~~ has a non-EAC-ABET accredited or nonengineering bachelor's degree with the minimum number of engineering science and design credits as required in an EAC-ABET accredited degree (48 semester or 72 quarter credits);

D. ~~(4)~~ has a graduate degree from an engineering program where the bachelor's degree in that discipline of engineering is EAC-ABET accredited, even though the applicant's bachelor's degree was earned in a non-EAC-ABET accredited or nonengineering program;

E. ~~(5)~~ graduation from a bachelor's engineering curriculum that has EAC-ABET accreditation and a graduate degree in engineering from an institution with an EAC-ABET accredited bachelor's curriculum in that discipline of engineering;

F. ~~(6)~~ graduation from an EAC-ABET accredited graduate engineering curriculum even though the applicant's bachelor's degree was earned in a non-EAC-ABET accredited or nonengineering program;

G. ~~(7)~~ graduation from an EAC-ABET accredited bachelor's engineering curriculum and graduation from an EAC-ABET accredited graduate engineering curriculum;

H. ~~(8)~~ has a non-EAC-ABET accredited or nonengineering bachelor's degree with the minimum number of engineering science and design credits as required in an EAC-ABET accredited degree (48 semester or 72 quarter credits) and a graduate degree from an engineering program where the bachelor's degree in that discipline of engineering is EAC-ABET accredited; or

I. ~~(9)~~ has a non-EAC-ABET accredited or nonengineering bachelor's degree with the minimum number of engineering science and design credits as required in an EAC-ABET accredited degree (48 semester or 72 quarter credits) and a graduate degree from an EAC-ABET accredited graduate engineering curriculum.

B. ~~Qualifying experience:~~

~~(1) completion of a minimum of four years of qualifying engineering experience, if the applicant meets the educational requirements of item A, subitem (1), (2), (4), (6), (8), or (9);~~

~~(2) completion of a minimum of six years of qualifying engineering experience, if the applicant meets the educational requirements of item A, subitem (3); or~~

~~(3) completion of a minimum of three years of qualifying engineering experience if the applicant meets the educational requirements of item A, subitem (5) or (7).~~

C. ~~Qualifying engineering experience gained before completion of one of the education requirements in item A must meet the following conditions:~~

~~(1) experience must be credited at a rate of 50 percent;~~

~~(2) experience gained before completion of at least two full years of one of the engineering curricula in item A, subitem (1), (2), (3), (5), or (7), must receive no credit; and~~

~~(3) experience gained before completion of at least one full year of the graduate engineering curricula in item A, subitem (4), (6), (8), or (9), must receive no credit.~~

~~D. Credit awarded under item C must not exceed the lesser of two years or 50 percent of the required number of years of qualifying engineering experience in this subpart.~~

Subp. 3. [Repealed, 21 SR 1427]

Subp. 4. **Experience requirement.**

A. To qualify for licensure as a professional engineer, the applicant shall present evidence of one of the following:

(1) completion of a minimum of four years of qualifying engineering experience if the applicant meets the education requirements of subpart 2a, item A, B, D, F, H, or I;

(2) completion of a minimum of six years of qualifying engineering experience if the applicant meets the education requirements of subpart 2a, item C; or

(3) completion of a minimum of three years of qualifying engineering experience if the applicant meets the education requirements of subpart 2a, item E or G.

B. Qualifying engineering experience gained before completion of one of the education requirements in subpart 2a must meet the following conditions:

(1) experience must be credited at a rate of 50 percent;

(2) experience gained before completion of at least two full years of one of the engineering curricula in subpart 2a, item A, B, C, E, or G, must receive no credit; and

(3) experience gained before completion of at least one full year of the graduate engineering curricula in subpart 2a, item D, F, H, or I, must receive no credit.

C. Credit awarded under item D must not exceed the lesser of two years or 50 percent of the required number of years of qualifying engineering experience in this subpart.

D. One year of experience consists of full- or part-time employment that extends over a period of no less than 12 months and includes no fewer than 2,000 hours of performance of engineering work described in part 1800.2805.

1800.2800 ENGINEERS QUALIFIED BY GRADUATION, LONG EXPERIENCE, AND EXAMINATION.

The Fundamentals of Engineering (FE) examination must be waived in those cases where the applicant furnishes evidence of:

A. being at least 40 years of age, having a verified professional engineering record of 20 years or more of qualifying engineering experience and meeting one of the ~~educational~~ education requirements of part 1800.2500, subpart 2a;

[For text of items B and C, see Minnesota Rules]

1800.2805 QUALIFYING EXPERIENCE DEFINED.

Subpart 1. Qualifying experience; generally.

A. As used in this part and parts 1800.2500 ~~and~~ 1800.2800, and 1800.2900, qualifying experience consists of ~~varied~~ diverse, progressive, ~~nonrepetitive~~, practical experience ~~at~~ performing engineering work that develops the applicant's ability to apply the knowledge gained during academic training to make sound judgments in solving engineering

problems and prepares the applicant to assume responsible charge of the work involved in the practice of engineering.

[For text of items B to E, see Minnesota Rules]

[For text of subpart 2, see Minnesota Rules]

1800.2900 PROCEDURES.

[For text of subpart 1, see Minnesota Rules]

Subp. 1a. **Request for certification as an engineer-in-training.** An applicant shall submit an application for certification as an engineer-in-training following passage of the FE examination and completion of the education requirement under part 1800.2500, subpart 2a, ~~item A~~. Payment of the application fee in Minnesota Statutes, section 326.105, must accompany the application. An official transcript of grades showing the degree awarded and date of graduation for all undergraduate and graduate degree programs and verification of passing the FE examination must be submitted before the applicant may be certified as an engineer-in-training.

Subp. 2. **Request for admission to Principles and Practice (PE) examination.** An applicant shall submit an application for admission to the PE examination under part 1800.2700, subpart 2, accompanied by payment of the application fee in Minnesota Statutes, section 326.105. The application must be made on a form provided by the board ~~and must include a detailed listing of engineering experience gained. The experience listing must include the name and mailing address of the applicant's supervisor for each period of employment. The board shall provide the applicant an experience reference form that must be signed and submitted to the board by each supervisor for each period of employment during which qualifying engineering experience was gained.~~ An official transcript of grades showing the degree awarded and date of graduation for all undergraduate and graduate degree programs must accompany the completed form, unless previously submitted. The

application must include one signed copy of a statement that the applicant has read the Board Rules of Professional Conduct and a signed certification as described in part 1800.0400, subpart 5.

Subp. 2a. **Requirement for documentation of experience.** Before a license as a professional engineer may be issued, the applicant must provide the board with a detailed listing of qualifying engineering experience gained according to part 1800.2500, subpart 4. The experience listing must include the name and mailing address of the applicant's supervisor for each period of employment. The board shall provide the applicant an experience reference form that must be signed and submitted to the board by each supervisor for each period of employment during which the qualifying engineering experience was gained.

[For text of subparts 3 to 6, see Minnesota Rules]

Subp. 7. Validity of application.

[For text of items A to D, see Minnesota Rules]

E. An applicant who passes the PE examination and does not provide the board with a detailed listing of qualifying engineering experience within three years of the date of the application for examination must submit a new application in order to obtain a license as a professional engineer.

1800.3505 EDUCATION AND EXPERIENCE.

[For text of subpart 1, see Minnesota Rules]

Subp. 2. Admission to the Fundamentals of Surveying (FS) examination. To qualify for admission to the FS examination, applicants shall present satisfactory evidence of one of the following:

A. graduation from a four-year land surveying curriculum ~~that meets the statutory requirements in place at the time of graduation~~ from an accredited institution of higher learning or being within 32 semester credits or 48 quarter credits of obtaining a land surveying degree ~~from a four-year land surveying curriculum that is approved by the board~~ as specified in subpart 4; or

B. graduation ~~from~~ with a bachelor's curriculum ~~that meets the statutory requirements in place at the time of graduation,~~ degree from an accredited institution of higher learning or being within 32 semester credits or 48 quarter credits of obtaining a bachelor's degree ~~under a curriculum that is approved by the board with,~~ and completion of a minimum of 22 11 semester credits or 32 16 quarter credits in land surveying as specified in subpart 4.

Subp. 3. **Admission to Principles and Practice of Surveying (PS) examination.** To qualify for admission to the PS examination, the applicant shall present evidence of meeting the ~~educational~~ education and qualifying experience requirements in item A or B.

[For text of items A and B, see Minnesota Rules]

C. Qualifying land surveying experience gained before completion of one of the education requirements in item A or B must meet the following conditions:

(1) experience must be obtained under the direct supervision of a licensed land surveyor; and

~~(2) experience must be credited at a rate of 50 percent; and~~

~~(3) (2) experience gained before completion of at least two full years of one of the land surveying curricula specified in items A and B~~ a high school degree or equivalent must receive no credit.

D. ~~Credit awarded under item C must not exceed half the minimum experience required in each of the experience categories in items A and B.~~ A minimum of one year of

qualifying experience must be gained after completion of one of the education requirements in item A or B.

E. One year of experience consists of full- or part-time employment that extends over a period of no less than 12 months and includes no fewer than 2,000 hours of performance of land surveying work described in item A or B.

[For text of subpart 4, see Minnesota Rules]

1800.3910 EDUCATION AND EXPERIENCE.

Subpart 1. **Written examination requirement.** An applicant for licensure within a geoscience discipline shall pass written examinations as provided in part 1800.3920.

An applicant for licensure under part 1800.0800, item I, whose original licensure in the other state was granted after August 4, 1997, shall satisfy the Minnesota licensing requirements that were in effect at the time of the applicant's original licensure in the other state. An applicant for licensure under part 1800.0800, item I, whose original licensure in the other state was granted before August 4, 1997, shall satisfy the Minnesota licensing requirements that were in effect on August 4, 1997.

The written Fundamentals of Geology (FG) examination or Fundamentals of Soil Science (FSS) examination must be waived by the board if the applicant requests a waiver and furnishes evidence of the following:

A. ~~the applicant has~~ having a doctorate degree in the geoscience discipline ~~in~~ for which the applicant is seeking licensure or equivalent doctorate degree as ~~approved~~ determined by the board; and

B. ~~the applicant meets~~ meeting the ~~educational~~ education requirements specified in subpart 5.

Subp. 2. **Admission to written fundamentals examination.** To qualify for admission to the written fundamentals examination for a geoscience discipline, the applicant shall present evidence of the following:

A. ~~graduation or being within 30 semester or 45 quarter credits of graduation from a geoscience curriculum approved by the board for, as specified in subpart 5, in the geoscience discipline for which the applicant is seeking licensure in, as specified in subpart 5;~~

B. enrollment in a geoscience curriculum approved by the board, as specified in subpart 5, and:

(1) for geology, completion of 30 semester or 45 quarter credits in geology, as specified in subpart 5; or

(2) for soil science, completion of 12 semester or 18 quarter credits in soil science and ten semester or 16 quarter credits in closely related geoscience or environmental science areas, as specified in subpart 5; or

~~B. C. graduation with a bachelor's degree from a non-board-approved curriculum with a minimum number of equivalent geoscience credits in geoscience as specified in subpart 5; or.~~

~~C. graduation with a master's or doctorate degree in a non-board-approved curriculum with a minimum number of equivalent geoscience credits as specified in subpart 5.~~

Subp. 3. **Admission to written professional examination.** To qualify for admission to the written professional examination for a geoscience discipline, the applicant shall present evidence of meeting the ~~educational~~ education and qualifying experience requirements in items A and B.

A. Education:

(1) graduation from a geoscience curriculum approved by the board, as specified in subpart 5, in the geoscience discipline ~~in~~ for which the applicant is seeking licensure ~~with the minimum number of geoscience credits as specified in subpart 5; or~~

(2) graduation ~~with a bachelor's degree~~ from a non-board-approved curriculum with a minimum number of equivalent ~~geoscience~~ geoscience credits in geoscience as specified in subpart 5; ~~or~~.

~~(3) graduation with a master's or doctorate degree in a non-board-approved curriculum with a minimum number of equivalent geoscience credits as specified in subpart 5.~~

B. Qualifying experience:

(1) completion of a minimum of ~~five~~ four years of qualifying ~~geoscience~~ experience in the geoscience discipline ~~in~~ for which the applicant is seeking licensure if the applicant ~~has graduated with a baccalaureate degree from a geoscience curriculum meeting~~ meets the education requirements of item A, subitem (1); or

~~(2) completion of a minimum of four years of qualifying geoscience experience in the discipline in which the applicant is seeking licensure if the applicant has graduated with a master's degree or higher from geoscience curriculum meeting the requirements of item A, subitem (1);~~

~~(3) completion of a minimum of six years of qualifying geoscience experience in the discipline in which the applicant is seeking licensure if the applicant meets the educational requirements of item A, subitem (2); or~~

~~(4)~~ (2) completion of a minimum of five years of qualifying ~~geoscience~~ experience in the geoscience discipline ~~in~~ for which the applicant is seeking licensure if the applicant meets the ~~educational~~ education requirements of item A, subitem ~~(3)~~ (2).

C. Qualifying geoscience experience gained before completion of one of the education requirements in item A must meet the following conditions:

(1) experience must be credited at a rate of 50 percent; and

(2) ~~no credit for experience gained before completion of at least two full years of one of the geoscience curricula specified in item A must receive no credit.~~ completing:

(a) for geology, 20 semester or 30 quarter credits in geology, as specified in subpart 5, item A, subitem (2); or

(b) for soil science, eight semester or 12 quarter credits as specified in subpart 5, item B, subitem (2), and seven semester or 11 quarter credits as specified in subpart 5, item B, subitem (3).

D. Credit awarded under item C must not exceed two years of the required number of years of qualifying geoscience experience in this subpart.

E. One year of experience consists of full- or part-time employment that extends over a period of no less than 12 months and includes no fewer than 2,000 hours of performance of geoscience work described in subpart 6.

Subp. 4. [Repealed, 38 SR 59]

Subp. 5. **Approved geoscience education.** A curriculum approved by the board must meet the following criteria.

A. For an applicant seeking licensure as a professional geologist, the applicant shall present evidence of:

(1) a baccalaureate or higher degree ~~with a major in geology~~ from an accredited institution of higher learning; and

(2) a minimum of ~~30~~ 40 semester or ~~45~~ 60 quarter credits in geology ~~with a minimum of 24 semester or 36 quarter credits~~ divided among at least ~~three~~ five of the following geology areas of study:

[For text of units (a) to (l), see Minnesota Rules]

(m) field geology or geologic field methods.

A maximum of nine semester credits or 12 quarter credits may be applied from any one area.

B. For applicants seeking licensure as a professional soil scientist, the applicant shall present evidence of meeting the criteria in subitems (1), (2), and (3):

(1) a baccalaureate or higher degree from an accredited institution of higher learning;

(2) a minimum of 16 semester or 24 quarter credits in soil science. ~~Soil science courses include,~~ including a minimum of two semester or three quarter credits in each of the following four core soil science areas of study:

[For text of units (a) to (d), see Minnesota Rules]

(3) a minimum of 14 semester or 21 quarter credits in soil science, closely related geoscience ~~courses~~, environmental science that may interact with or impact soil, or investigatory methods used in the practice of geoscience including any of the following ~~categories~~ areas of study:

(a) soil science;

i. introduction to soil science; or

ii. any soil science area of study listed in item B, subitem (2);

~~(a)~~ (b) geology;

~~i. groundwater geology;~~

~~ii. i. introduction to geology or introduction to physical geology; or~~

~~iii. ii. any geology course area of study listed in item A, subitem~~

(2);

~~(b) hydrology and water quality;~~

~~(c) water and wastewater microbiology;~~

~~(c) soil or geology-based natural resource inventory;~~

~~(d) interaction of soil and with solid, liquid, gaseous, or hazardous waste processing I or H wastes;~~

~~(e) hydrology and water quality;~~

~~(e) (f) remote sensing, aerial photo interpretation, or Geographic Information Systems (GIS) in natural resource systems; or~~

~~(f) aerial photo interpretation;~~

~~(g) remote sensing;~~

~~(h) natural resource inventory;~~

~~(i) introduction to land use planning;~~

~~(j) land use and state government;~~

~~(k) (g) use of and impacts to soil in agronomy, agricultural engineering, environmental science, forestry, or land use planning.~~

~~(l) agricultural engineering;~~

~~(m) engineering or forestry courses related to soil management;~~

~~(n) plant physiology; or~~

~~(e) ecology courses.~~

C. A maximum of three semester or five quarter credits of masters or doctorate degree thesis credits can be applied to the total number of credits.

~~D. The same course must not be used to meet the requirement for more than one area.~~

D. Credits may only be applied to one required area of study.

Subp. 6. **Qualifying experience defined.** Qualifying experience for geology licensure must be obtained under the direct supervision of a licensed geologist. Qualifying experience for soil science licensure must be obtained under the direct supervision of a licensed ~~geologist~~ soil scientist, licensed ~~soil scientist~~ geologist, or licensed professional engineer who has qualified education and experience in the soil science discipline.

[For text of items A to D, see Minnesota Rules]

Subp. 7. [Repealed, 38 SR 59]

1800.3920 WRITTEN EXAMINATION.

[For text of subpart 1, see Minnesota Rules]

Subp. 2. **Fundamentals examination.** ~~An applicant shall be admitted to The fundamentals examination for a geoscience discipline, if, by the date of the examination, the applicant has completed the education~~ may be taken upon meeting the requirements in part 1800.3910, subpart 2. ~~The applicant shall submit an official transcript from the college or university the applicant is attending or has attended.~~ An applicant taking the fundamentals examination in a geoscience discipline shall be notified of the score in writing. An applicant failing this examination and electing to take the examination again shall take the entire examination. A description of the scope of the fundamentals examinations for each geoscience discipline is provided in subpart 4.

A final official transcript showing the degree awarded and date of graduation shall be submitted to the board before the in-training number is released to the applicant. The passing of this examination and providing proof of the degree awarded and date of graduation gives the applicant the in-training status as defined in Minnesota Statutes, section 326.10, subdivision 7, paragraph (3). The applicant shall take and pass the fundamentals examination in the geoscience discipline for which the applicant is seeking licensure before being permitted to take the professional examination.

Subp. 3. **Professional examination.** An applicant shall be admitted to the professional examination ~~in~~ for the geoscience discipline in which the applicant is seeking licensure, if, by the date of the examination, the applicant has received confirmation of passing the fundamentals examination in the geoscience discipline in which the applicant is seeking licensure and meets the education and experience requirements in part 1800.3910, subpart 3. The applicant shall submit verification of completion of the experience requirements in part 1800.3910, subpart 3, to the board before the applicant is qualified for admission to the professional examination. The professional examination covering the principles and practice of geoscience in the geoscience discipline in which the applicant is seeking licensure is required as described in subpart 4. A person failing the professional examination and electing to take the examination again shall take the entire professional examination. A description of the scope of the professional examination for each geoscience discipline is provided in subpart 4.

[For text of subparts 4 and 5, see Minnesota Rules]