

Office of the Revisor of Statutes

Administrative Rules



TITLE: Adopted Permanent Rules Relating to Engineering Examination and Experience, Land Surveying Education and Experience, and Geoscience Education and Experience

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

REVISOR ID: R-4579

MINNESOTA RULES: Chapter 1800

The attached rules are approved for
filing with the Secretary of State

Cindy K. Maxwell

Shoree Speer
Assistant Deputy Revisor

202332

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

ORDER ADOPTING RULES

**Adoption of Rules Governing Definitions, Engineering Examination and Experience,
Land Surveying Education and Experience, and Geoscience Education and Experience;
Minnesota Rules, parts 1800.0050, 1800.2500, 1800.2800, 1800.2805, 1800.2900, 1800.3505,
1800.3910, and 1800.3920; Revisor's ID Number R-04579, OAH Docket No. 5 9038 36223;
Revisor's ID Number R-04579**

BACKGROUND INFORMATION

1. The Board of Architecture, Engineering, Land Surveying, Landscape Architecture, Geoscience and Interior Design ("Board") has complied with all notice and procedural requirements in Minnesota Statutes, chapter 14, Minnesota Rules, chapter 1400, and other applicable law. The Board authorized proposing the rules at its meeting on November 21, 2019, and a quorum was present.

2. The Board received 35 written comments and submissions on the rules. Thirteen persons requested a public hearing. Therefore, there are not 25 or more requests for a public hearing. The Board received three requests for notice of submission to the Office of Administrative Hearings.

3. After the close of the 30-day comment period, the Board reviewed the comments it received and made the following changes:

Rule 1800.2500 Subpart 2a

Headnote change only: "Education and experience requirements"

Rule 1800.3910, Subpart 2, item B

(1) for geology, completion of ~~30~~ 20 semester or ~~45~~ 30 quarter credits in geology, as specified in subpart 5; or

Rule 1800.3910, Subpart 5, item B

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

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

(l) geomorphology; and

(m) field geology or geologic field methods;

(n) medical geology;

(o) geostatistical database;

(p) a combination of two or more of the areas of study in units (a) to (o), so long as they comprise 100 percent of the course content.

Rule 1800.3505, Subp. 2, Items A and B

A. graduation from a four-year land surveying curriculum as specified in subpart 4 from an accredited institution of higher learning or being within 32 semester credits or 48 quarter credits of obtaining ~~a land surveying degree as specified in subpart 4 of graduation from the same;~~ or

B. graduation with a bachelor's degree from an accredited institution of higher learning or being within 32 semester credits or 48 quarter credits of obtaining a bachelor's degree, and completion of a minimum of 11 semester credits or 16 quarter credits ~~in~~ from the land surveying ~~as categories~~ specified in subpart 4, items A to K.

4. The rules are needed and reasonable.

5. The Board adopted the rules at its meeting on November 21, 2019, a quorum was present, and the undersigned was authorized to sign this order.

ORDER

The above-named rules, in the form published in the State Register on August 19, 2019, with the modifications as indicated in the Revisor's draft, file number AR-4579, dated October 3, 2019, are adopted under my authority in Statutes, section 326.06.

12.23.19
Date

Doreen Johnson
Doreen Johnson, Executive Director
Board of Architecture, Engineering, Land Surveying,
Landscape Architecture, Geoscience and
Interior Design

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

1.3 **Adopted Permanent Rules Relating to Engineering Examination and Experience, Land**
1.4 **Surveying Education and Experience, and Geoscience Education and Experience**

1.5 **1800.0050 DEFINITIONS.**

1.6 *[For text of subpart 1, see Minnesota Rules]*

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

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

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

1.15 **1800.2500 EDUCATION AND EXPERIENCE.**

1.16 *[For text of subpart 1, see Minnesota Rules]*

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

1.20 A. completion of one of the education requirements in subpart 2a;

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

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

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

2.3 Subp. 2a. **Education and experience requirements.** To qualify for certification as
2.4 an engineer-in-training, admission to the written PE examination, or licensure as a
2.5 professional engineer, an applicant shall present evidence of one of the following:

2.6 A. graduation from an EAC-ABET accredited bachelor's engineering curriculum;

2.7 B. graduation from a bachelor's engineering curriculum that receives EAC-ABET
2.8 accreditation within five years of the applicant's graduation;

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

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

2.15 E. graduation from a bachelor's engineering curriculum that has EAC-ABET
2.16 accreditation and a graduate degree in engineering from an institution with an EAC-ABET
2.17 accredited bachelor's curriculum in that discipline of engineering;

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

2.21 G. graduation from an EAC-ABET accredited bachelor's engineering curriculum
2.22 and graduation from an EAC-ABET accredited graduate engineering curriculum;

2.23 H. a non-EAC-ABET accredited or nonengineering bachelor's degree with the
2.24 minimum number of engineering science and design credits as required in an EAC-ABET

3.1 accredited degree (48 semester or 72 quarter credits) and a graduate degree from an
3.2 engineering program where the bachelor's degree in that discipline of engineering is
3.3 EAC-ABET accredited; or

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

3.8 Subp. 3. [Repealed, 21 SR 1427]

3.9 Subp. 4. **Experience requirement.**

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

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

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

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

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

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

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

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

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

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

4.8 **1800.2800 ENGINEERS QUALIFIED BY GRADUATION, LONG EXPERIENCE,**
4.9 **AND EXAMINATION.**

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

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

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

4.16 **1800.2805 QUALIFYING EXPERIENCE DEFINED.**

4.17 Subpart 1. **Qualifying experience; generally.**

4.18 A. As used in this part and parts 1800.2500, 1800.2800, and 1800.2900, qualifying
4.19 experience consists of diverse, progressive, practical experience performing engineering
4.20 work that develops the applicant's ability to apply the knowledge gained during academic
4.21 training to make sound judgments in solving engineering problems and prepares the applicant
4.22 to assume responsible charge of the work involved in the practice of engineering.

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

4.24 *[For text of subpart 2, see Minnesota Rules]*

5.1 **1800.2900 PROCEDURES.**5.2 *[For text of subpart 1, see Minnesota Rules]*

5.3 Subp. 1a. **Request for certification as an engineer-in-training.** An applicant shall
5.4 submit an application for certification as an engineer-in-training following passage of the
5.5 FE examination and completion of the education requirement under part 1800.2500, subpart
5.6 2a. Payment of the application fee in Minnesota Statutes, section 326.105, must accompany
5.7 the application. An official transcript of grades showing the degree awarded and date of
5.8 graduation for all undergraduate and graduate degree programs and verification of passing
5.9 the FE examination must be submitted before the applicant may be certified as an
5.10 engineer-in-training.

5.11 Subp. 2. **Request for admission to Principles and Practice (PE) examination.** An
5.12 applicant shall submit an application for admission to the PE examination under part
5.13 1800.2700, subpart 2, accompanied by payment of the application fee in Minnesota Statutes,
5.14 section 326.105. The application must be made on a form provided by the board. An official
5.15 transcript of grades showing the degree awarded and date of graduation for all undergraduate
5.16 and graduate degree programs must accompany the completed form, unless previously
5.17 submitted. The application must include one signed copy of a statement that the applicant
5.18 has read the Board Rules of Professional Conduct and a signed certification as described
5.19 in part 1800.0400, subpart 5.

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

6.1 for each period of employment during which the qualifying engineering experience was
6.2 gained.

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

6.4 **Subp. 7. Validity of application.**

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

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

6.10 **1800.3505 EDUCATION AND EXPERIENCE.**

6.11 *[For text of subpart 1, see Minnesota Rules]*

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

6.15 A. graduation from a four-year land surveying curriculum as specified in subpart
6.16 4 from an accredited institution of higher learning or being within 32 semester credits or
6.17 48 quarter credits ~~of obtaining a land surveying degree as specified in subpart 4~~ of graduation
6.18 from the same; or

6.19 B. graduation with a bachelor's degree from an accredited institution of higher
6.20 learning or being within 32 semester credits or 48 quarter credits of obtaining a bachelor's
6.21 degree, and completion of a minimum of 11 semester credits or 16 quarter credits ~~in~~ from
6.22 the land surveying as categories specified in subpart 4, items A to K.

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

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

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

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

7.9 (2) experience gained before completion of a high school degree or equivalent
7.10 must receive no credit.

7.11 D. A minimum of one year of qualifying experience must be gained after
7.12 completion of one of the education requirements in item A or B.

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

7.16 *[For text of subpart 4, see Minnesota Rules]*

7.17 **1800.3910 EDUCATION AND EXPERIENCE.**

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

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

8.1 the other state was granted before August 4, 1997, shall satisfy the Minnesota licensing
8.2 requirements that were in effect on August 4, 1997.

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

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

8.8 B. meeting the education requirements specified in subpart 5.

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

8.12 A. graduation from a geoscience curriculum approved by the board, as specified
8.13 in subpart 5, in the geoscience discipline for which the applicant is seeking licensure;

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

8.16 (1) for geology, completion of ~~30~~ 20 semester or ~~45~~ 30 quarter credits in
8.17 geology, as specified in subpart 5; or

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

8.21 C. graduation from a non-board-approved curriculum with a minimum number
8.22 of equivalent credits in geoscience as specified in subpart 5.

8.23 Subp. 3. **Admission to written professional examination.** To qualify for admission
8.24 to the written professional examination for a geoscience discipline, the applicant shall present

9.1 evidence of meeting the education and qualifying experience requirements in items A and
9.2 B.

9.3 A. Education:

9.4 (1) graduation from a geoscience curriculum approved by the board, as
9.5 specified in subpart 5, in the geoscience discipline for which the applicant is seeking
9.6 licensure; or

9.7 (2) graduation from a non-board-approved curriculum with a minimum
9.8 number of equivalent credits in geoscience as specified in subpart 5.

9.9 B. Qualifying experience:

9.10 (1) completion of a minimum of four years of qualifying experience in the
9.11 geoscience discipline for which the applicant is seeking licensure if the applicant meets the
9.12 education requirements of item A, subitem (1); or

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

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

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

9.19 (2) no credit for experience gained before completing:

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

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

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

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

10.6 Subp. 4. [Repealed, 38 SR 59]

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

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

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

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

10.15 *[For text of units (a) to ~~(t)~~ (k), see Minnesota Rules]*

10.16 (l) geomorphology; and

10.17 (m) field geology or geologic field methods;

10.18 (n) medical geology;

10.19 (o) geostatistical database; and

10.20 (p) a combination of two or more of the areas of study in units (a) to (o),
10.21 so long as they comprise 100 percent of the course content.

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

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

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

11.5 (2) a minimum of 16 semester or 24 quarter credits in soil science, including
11.6 a minimum of two semester or three quarter credits in each of the following four core soil
11.7 science areas of study:

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

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

11.13 (a) soil science;

11.14 i. introduction to soil science; or

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

11.16 (b) geology;

11.17 i. introduction to geology or introduction to physical geology; or

11.18 ii. any geology area of study listed in item A, subitem (2);

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

11.20 (d) interaction of soil with solid, liquid, gaseous, or hazardous wastes;

11.21 (e) hydrology and water quality;

11.22 (f) remote sensing, aerial photo interpretation, or Geographic Information

11.23 Systems (GIS) in natural resource systems; or

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

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

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

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

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

12.12 Subp. 7. [Repealed, 38 SR 59]

12.13 **1800.3920 WRITTEN EXAMINATION.**

12.14 *[For text of subpart 1, see Minnesota Rules]*

12.15 Subp. 2. **Fundamentals examination.** The fundamentals examination for a geoscience
12.16 discipline may be taken upon meeting the requirements in part 1800.3910, subpart 2. An
12.17 applicant taking the fundamentals examination in a geoscience discipline shall be notified
12.18 of the score in writing. An applicant failing this examination and electing to take the
12.19 examination again shall take the entire examination. A description of the scope of the
12.20 fundamentals examinations for each geoscience discipline is provided in subpart 4.

12.21 A final official transcript showing the degree awarded and date of graduation shall be
12.22 submitted to the board before the in-training number is released to the applicant. The passing
12.23 of this examination and providing proof of the degree awarded and date of graduation gives
12.24 the applicant the in-training status as defined in Minnesota Statutes, section 326.10,

13.1 subdivision 7, paragraph (3). The applicant shall take and pass the fundamentals examination
13.2 in the geoscience discipline for which the applicant is seeking licensure before being
13.3 permitted to take the professional examination.

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

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

December 26, 2019

VIA EMAIL ONLY

Nancy Breems
Secretary of State, Elections Division
180 State Office Building
100 Rev Dr Martin Luther King Jr Blvd
St. Paul, Minnesota 55155-1299
official.documents@state.mn.us

Re: *In the Matter of Amendments to Rules Relating to Engineering Examination and Experience, Land Surveying Education and Experience, and Geoscience Education and Experience*
OAH 5-9038-36223; Revisor R-4579

Dear Ms. Breems:

Enclosed for filing is an electronic copy of the above-entitled adopted rules.

Please send the agency copy of the rules to:

Kay Weiss
85 E 7th Pl #125
Saint Paul, MN 55101
kay.weiss@state.mn.us

If you have any questions regarding this matter, please contact me at (651) 361-7888, at lisa.armstrong@state.mn.us, or via facsimile at (651) 539-0310.

Sincerely,



LISA ARMSTRONG
Legal Assistant

Enclosures

cc: Kay Weiss (via email)