

## Chapter GHSS 4

### PROFESSIONAL SOIL SCIENTIST LICENSE

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**Note:** Chapter GHSS 4 was created as an emergency rule effective May 15, 1999.

**GHSS 4.01 Authority and purpose.** The rules in this chapter are adopted under authority in ss. 15.08 (5) (b), 227.11 (2), 470.03 (1) (a) and 470.04, Stats. The purpose of the rules in this chapter is to interpret basic education, experience and examination requirements for licensure as a professional soil scientist as specified in ss. 470.04 and 470.05, Stats.

**History:** Cr. Register, December, 1999, No. 528, eff. 1-1-00.

**GHSS 4.02 Applications.** An applicant who files an application but does not comply with a request for information related to the application within one year from the date of the request shall file a new application.

**Note:** Applications are available upon request to the Professional Soil Scientist Section of the board at 1400 East Washington Avenue, P.O. Box 8935, Madison, Wisconsin 53708.

**History:** Cr. Register, December, 1999, No. 528, eff. 1-1-00.

**GHSS 4.03 Experience as a professional soil scientist. (1)** To qualify as satisfactory professional soil science work for the purposes of s. 470.04 (4) (c), Stats., an applicant's experience shall include the application of accepted principles in the practice of soil science and shall demonstrate an applicant's progressive development of competence to practice as a professional soil scientist. The experience shall be acquired in the areas of the practice of soil science listed in sub. (2) (a) to (h), or in other areas of the practice of soil science which in the opinion of the professional soil scientist section provide the applicant with a knowledge of principles and data related to the practice of soil science at least equivalent to that which would be acquired by experience in the areas of practice listed. Experience in every listed area is not required.

**(2)** Areas of experience in the practice of professional soil science include:

(a) Soil physics: the study of the physical properties of porous media, including soils; and the determination of the state, distribution, transport and balances of matter and energy in porous media, especially as related to water, gas and heat.

(b) Soil chemistry: the determination of the chemical constituents, chemical properties, and chemical reactions in porous media, including soils.

(c) Soil classification, morphology and mapping: the description, classification, interpretation and mapping of soil materials in the landscape.

(d) Soil mineralogy: the study of soil science that deals with porous media inorganic materials, including the soils of the earth's crust to the depth of weathering or of sedimentation.

(e) Soil biochemistry: the study of soil science concerned with enzymes, and the reactions, activities and products of soil microorganisms.

(f) Soil biology: the assessment of soil-inhabiting microorganisms and macroorganisms, including their identification, functions, activities and cycles.

(g) Soil fertility: the analysis, interpretation and management of the soil to enhance soil quality and provide nutrients in adequate amounts and in proper balance for the growth of specified plants.

(h) Land use management: the management and practices associated with land waste application, nutrient management, non-point source contaminant control, soil and water conservation, and other land use issues associated with soil management.

**(3)** Not more than one year of satisfactory experience credit may be granted for any calendar year.

**History:** Cr. Register, December, 1999, No. 528, eff. 1-1-00.

**GHSS 4.04 Education. (1)** In satisfaction of the education requirement under s. 470.04 (4) (b), Stats., the professional soil scientist section shall accept a bachelor's degree in soil science, or a post baccalaureate degree reflecting that the applicant has completed at least 30 semester hours or 45 quarter hours of course credits in soil science of a variety and nature sufficient to constitute a major in soil science, granted by a college or university accredited by a regional accrediting agency approved by the state board of education in the state in which the college or university is located, or accredited by a Canadian accrediting agency satisfactory to the board.

**(2)** If the degree is from an educational institution not meeting the requirements of sub. (1), the applicant must provide an official evaluation by a transcript evaluation service acceptable to the professional soil scientist section which shows that the degree is equivalent to a bachelor's degree in soil science or a bachelor's degree with a major in soil science meeting the requirements under sub. (1).

**(3)** In order to be considered a major in soil science, an applicant must have completed at least 30 semester hours or 45 quarter hours of course credits which include not less than 15 semester credits or 23 quarter credits in at least 3 of the following areas:

- (a) Soil biology.
- (b) Soil chemistry.
- (c) Soil classification, morphology and mapping.
- (d) Soil conservation and management.
- (e) Soil fertility.
- (f) Soil physics.

**(4)** In addition to the coursework required under sub. (3), other coursework that may be used to satisfy the 30 semester hour or 45 quarter hour requirement include, but are not limited to, the following:

- (a) Agronomy.
- (b) Bacteriology.
- (c) Botany.
- (d) Engineering.
- (e) Forestry.
- (f) Geography.
- (g) Geology.
- (h) Horticulture.
- (i) Hydrology.
- (j) Meteorology.
- (k) Plant pathology.

**History:** Cr. Register, December, 1999, No. 528, eff. 1-1-00.

**GHSS 4.05 Examinations. (1)** REQUIRED EXAMINATIONS. All applicants for initial licensure as a professional soil scientist shall pass examinations for the professional practice of soil

science approved by the professional soil scientist section. Required examinations shall include a fundamentals examination and a principles and practice examination.

**(2) FUNDAMENTALS EXAMINATION.** The fundamentals examination requires an understanding of the physical and mathematical sciences involved in the fundamentals of soil science. To be eligible to take the fundamentals examination, an applicant shall have done one of the following:

(a) Be of not less than second semester senior standing in a bachelor of science program in soil science meeting the requirements of s. GHSS 4.04.

(b) Have completed at least 24 semester hours or 36 quarter hours of course credits for the degree in soil science meeting the requirements of s. GHSS 4.04.

(c) Have at least 4 years of experience which is determined by the professional soil scientist section to be equivalent to the requirements of s. GHSS 4.04.

**(3) PRINCIPLES AND PRACTICE EXAMINATION.** The principles and practice examination requires the ability to apply soil science principles and judgment to problems in the practice of professional soil science.

(a) To be eligible to take the principles and practice examination, an applicant under s. 470.04 (4) (c) 1., Stats., shall have done the following:

1. Met the requirements under s. 470.04 (4) (a), Stats.
2. Met the requirement under s. 470.04 (4) (b), Stats., or have at least 5 years of professional experience in addition to the qualifying experience under subd. 3., which is determined by the professional soil scientist section to be equivalent to the requirement under s. 470.04 (4) (b), Stats.
3. Completed at least 4 years of professional experience in soil science work of a character satisfactory to the professional soil scientist section, or completed at least 3 years of professional experience in soil science work of a character satisfactory to the section if the applicant has one or more advanced degrees relevant to the practice of professional soil science, demonstrating that the applicant is qualified to assume responsible charge of soil science work. At least one year of the qualifying professional experience under this subdivision must have been performed under the supervision of one or more of the following:

a. A person who is at the time of application licensed as a professional soil scientist under this chapter or who, during the period of supervised experience, was licensed as a professional soil scientist under ch. 470, 1997 Stats.

b. A person who, during the period of supervised experience, was licensed as a professional soil scientist in another state, territory or possession of the United States or in another country that has licensure requirements for professional soil scientists that are not lower than the requirements for licensure under this chapter.

c. A person who, during the period of supervised experience, is deemed by the professional soil scientist section to have been qualified to have responsible charge of soil science work.

(b) To be eligible to take the principles and practice examination, an applicant under s. 470.04 (4) (c) 2., Stats., shall have done the following:

1. Met the requirements under s. 470.04 (4) (a), Stats.
2. Met the requirement under s. 470.04 (4) (b), Stats., or have at least 5 years of professional experience in addition to the qualifying experience under subd. 3., which is determined by the professional soil scientist section to be equivalent to the requirement under s. 470.04 (4) (b), Stats.
3. Completed at least 6 years of professional experience in soil science work of a character satisfactory to the professional soil scientist section, or completed at least 5 years of professional experience in soil science work of a character satisfactory to the section if the applicant has one or more advanced degrees relevant to the practice of professional soil science, demonstrating that the

applicant is qualified to assume responsible charge of soil science work. At least one year of the qualifying professional experience under this subdivision must have been performed under a peer review system approved by the professional soil scientist section.

**(3m) APPLICATION FOR EXAMINATION.** An applicant for initial licensure shall file an application for examination with the professional soil scientist section not less than 2 months before the scheduled date of the examination.

**(4) AMERICANS WITH DISABILITIES ACT.** Otherwise qualified applicants with disabilities shall be provided with reasonable accommodations.

**(5) EXAMINATION AND REFUND FEES.** The fee for the examinations for professional soil scientists and the requirements for refund of fees are specified in s. 440.05, Stats., and ch. RL 4, respectively.

**(6) PLACE AND TIME OF EXAMINATIONS.** The examinations required by this section shall be held at sites and on dates designated by the professional soil scientist section.

**(7) PASSING SCORES.** (a) The passing scores set by the professional soil scientist section represent the minimum competency required to protect public health and safety.

(b) The fundamentals of soil science and the principles and practice of soil science examinations are scored separately. An applicant shall achieve a passing score on each of the required examinations to qualify for licensure.

(c) The professional soil scientist section may accept the recommendations of the examination provider for the passing scores on the fundamentals of soil science and the principles and practice of soil science examinations.

**(8) CHEATING.** The professional soil scientist section may deny release of scores or issuance of a credential if the board determines that the applicant violated rules of conduct of the examination or otherwise acted dishonestly.

**History:** Cr. Register, December, 1999, No. 528, eff. 1-1-00; am. (2) (c) and (7) (b), r. (7) (d), Register, November, 2000, No. 539, eff. 12-1-00.

**GHSS 4.06 Application contents.** An application for licensure as a professional soil scientist shall include:

**(1)** Either of the following:

(a) Official transcripts of graduate and undergraduate training, properly attested to by the degree granting institution and submitted by the institution directly to the professional soil scientist section establishing that the applicant has been granted a bachelor's degree in soil science or a bachelor's degree with a soil science major meeting the requirements under s. 470.04 (4) (b), Stats., granted by a college or university accredited by a regional accrediting agency approved by the state board of education in the state in which the college or university is located, or accredited by a Canadian accrediting agency satisfactory to the board, or

(b) A chronological history of the applicant's employment or other qualifying experience in satisfaction of s. 470.04 (7), Stats.

**(2)** A chronological history of the applicant's employment or other qualifying experience in satisfaction of s. 470.04 (4) (c) 1. or 2., Stats.

**(3)** For applicants applying under s. 470.04 (4) (c) 1., Stats., a completed "supervised soil science experience" form completed by a supervisor relating to professional soil science and who is one of the following:

(a) A professional soil scientist who, during the time of the supervised practice, was licensed in this state.

(b) A professional soil scientist who, during the time of the supervised practice, was licensed in another licensing jurisdiction that has licensure requirements not lower than the requirements for licensure in this state.

(c) A person who the board determines is qualified to have responsible charge of soil science work.

**(4)** For applicants applying under s. 470.04 (4) (c) 2., Stats., submission of at least 3 "peer evaluation" forms satisfactory to the

board completed by licensed professional soil scientists who have had professional contact with the applicant's practice and who certify that the applicant is qualified to assume responsible charge of soil science work.

(5) References from at least 5 individuals, at least 3 of whom shall be professionally competent to evaluate the applicant's practice.

(6) The fee required under s. 440.05 (1), Stats.

(7) For applicants previously licensed in another state, territory or possession of the United States or in another country, verification of the applicant's licensure in the licensing jurisdiction of original licensure or, if the applicant has permitted his or her licensure in the jurisdiction of original licensure to lapse, verification of licensure in the licensing jurisdiction where the applicant is currently licensed and where the applicant was last engaged in the practice of professional soil science.

(8) For applicants who have a pending criminal charge or have been convicted of a crime, all related information necessary for the professional soil scientist section to determine whether the circumstances of the pending criminal charge or criminal conviction are substantially related to the circumstances of the practice of soil science.

(9) Any additional data, exhibits or references showing the extent and quality of the applicant's experience that may be required by the professional soil scientist section.

(10) Evidence of successful completion of fundamentals of soil science and principles and practice of soil science examinations.

**Note:** Application forms are available upon request to the Professional Soil Scientist Section of the board at 1400 East Washington Avenue, P.O. Box 8935, Madison, Wisconsin 53708.

**History:** Cr. Register, December, 1999, No. 528, eff. 1-1-00.