Requirements for the Accreditation of Environmental Health Science and Protection Baccalaureate Degree Programs

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NATIONAL ENVIRONMENTAL HEALTH SCIENCE & PROTECTION ACCREDITATION COUNCIL (EHAC)

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I. Introduction: Criteria Explanation and Summary of the Accreditation Process

Accreditation Goal and Criteria Statement

The goal of accreditation of undergraduate environmental health science and protection degree programs in the U.S. or abroad by the National Environmental Health Science and Protection Accreditation Council (EHAC/Council) is to enhance the education and training of students who intend to become environmental health science and protection practitioners/professionals. The requirements used in program evaluation have been developed through the joint efforts of environmental health science and protection academicians and practitioners. The intent of these requirements is to be flexible to the extent that they support program expertise and quality, and are consistent with regional needs, while at the same time meeting the minimum criteria for graduates of an EHAC accredited program. The Council understands that the accreditation process has a regional context.

Background of the Accreditation Council

The National Accreditation Council for Environmental Health Curricula was established in 1967, with a charge to develop criteria and to implement a program accrediting undergraduate and graduate academic programs in the field of environmental health. The name of the Council was changed to the National Environmental Health Science and Protection Accreditation Council in 1991 to better reflect the entire discipline considered by the Council.

Membership of the Council consists of qualified academic and practicing professionals elected to the Council by Members of the Council, and one public Member appointed by the Council. Bylaws promote a balance of academic professionals teaching in environmental health and trained practitioners working in environmental control and public health agencies, institutions, and industries.

Purpose of Accreditation

The aims and objectives of the Council shall be to:

- Promote a high-quality education and training for persons studying environmental health science and protection
- Assist and support universities and colleges developing or offering a curriculum in environmental health science and protection, and advise programs on curriculum content, sustainability, and faculty qualifications
- Promote commonality in coverage of basic concepts of environmental health science and protection education
- Evaluate academic programs in environmental health science and protection using requirements established by the Council
- Prepare graduates for the diverse challenges associated with the field of environmental health science and protection
- Publish a list of the institutions with programs accredited by the Council.
Summary of Accreditation Process:

The Council and its members are available to provide advice or assistance through correspondence, telephone conferences, or on-site consultation to faculty who have developed or are considering the development of an environmental health science and protection curriculum. The Council has developed requirements for faculty to use in preparing a Self-Study Report of their programs. The Council will consider accreditation of an environmental health science and protection program upon request by the program administrators, provided that the institution is accredited by a regional accrediting association for institutions of higher learning (post-secondary education) and the degree program has graduated one or more classes. After an institution seeking accreditation has submitted a Self-Study Report, with supporting materials, to the Council, a Site Visit Team will conduct an assessment of that institution to evaluate and confirm that EHAC requirements are being met. Site Visit Reports will be public documents available for review.

The Site Visit Team (Team) is composed of an environmental health science and protection academician and a practitioner. Three Site Visitors are required for institutions applying jointly for accreditation or reaccreditation of more than one EHAC accredited degree program.

The purpose of the Site Visit is to verify information submitted to the Council and to supplement that material with information as required by Members of the Council. The Site Visit is conducted to establish a clear understanding and comprehensive knowledge of the environmental health science and protection curriculum and the organization and administration of the program. The Team will explore relationships established by the environmental health science and protection faculty, students, faculty in related programs, and the community. Before leaving the institution, the Team will meet with the dean or other appropriate administrators to report on its observations and on the general tenor of the information and details which will be emphasized in the survey team's report. Please use the detailed Site Visit schedule linked here to arrange the Site Visit Agenda.

The Team will prepare a written Site Visit Report containing comments on its observations and its recommendations for the enhancement of the program in reference to subject matter covered by the accreditation requirements. The environmental health science and protection Program Director will have an opportunity to review the Site Visit Report for accuracy and submit corrections before the final document is submitted to the Council.

The Team will report its findings to the Council at its next Annual Meeting. A representative of the institution is required to participate in the discussion. Discussions of the Council relevant to a specific program are treated as confidential information by the Council. The Council will enter closed session to make an accreditation decision. Program representatives are immediately notified of the Council's decision.

II. Accreditation Criteria

A. Institution
A curriculum in environmental health science and protection must be offered through a university or a college which is an accredited institution of higher learning.

B. Faculty

• The faculty member responsible for administering the environmental health science and protection program (Program Director) must be a full-time faculty member qualified for this position by an advanced degree in a relevant academic discipline and pertinent experience relevant to environmental health science (as defined in EHAC Governing Policy 4.9).

• At least two Full-time Equivalents employed by the university in the environmental health science and protection degree program are to be qualified for their positions by an advanced degree in a relevant academic discipline and/or pertinent experience relevant to environmental health science. Use of environmental health science and protection practitioners is acceptable to supplement the full-time environmental health science and protection faculty employed by the university.

• Faculty workloads must fall within the norm for the institution. Time should be allocated for faculty research, field practice, and/or consultation in the discipline of environmental health science and protection.

• Faculty/student ratio must be adequate to satisfy the instruction, advising and placement needs of the environmental health science and protection students. The ratio must fall within the norm of science-based programs of the institution.

C. Program Funding
The institution must provide funding to assure basic support for adequate faculty, staff, facilities, and equipment for the program.

D. Enrollment
The number of students enrolled in environmental health science and protection curricula should be commensurate with physical facilities, financial resources, and the number of faculty available.

E. Library
Students and faculty must have access to current environmental health science, environmental science, and health literature.

F. Advisory Committee
An external advisory committee to the environmental health science and protection program is required. The Council leaves operational format of this committee to the institution to best fit the program needs, e.g., formal meeting, teleconference, e-mail, etc. Input from the committee must be documented in Minutes and available for Council review during the Site Visit. Documentation available for review shall include evaluation of external advisory committee input (e.g., minutes from meeting) and action implemented as a result of this input. (e.g., department meeting minutes).
III. Baccalaureate Environmental Health Science and Protection Degree - Curriculum Criteria

A. The department or unit offering the environmental health science and protection curriculum shall have a statement of philosophy and objectives of the program.

B. The four-year curriculum shall include the following general and specific objectives.

   **General Objectives:**
   • Promote critical thinking.
   • Provide for the development of the skills, technical knowledge and attributes necessary for graduates to function as members of a health team in the public or private sector.
   • Inspire students to continue their education throughout life and to fully appreciate their professional obligations.

   **Specific Objectives (See Curriculum Table):**
   • Provide a sound foundation of instruction in core, related, and technical areas.
   • Provide for an extended professional/field training practicum or experience for each student.
   • Provide studies in the following areas:
     o Natural Sciences: biology, microbiology, chemistry, and physics
     o Communication: written composition, public speaking, data literacy, and computer literacy. Recommended, but not required: additional work in technical writing
     o Mathematics: pre-calculus. Recommended but not required: Calculus
     o General Education: humanities and social sciences.

   It is recognized that each institution has its own unique requirements and/or constraints which may dictate the depth and breadth of a curriculum. The resources at hand, including the availability and qualification of faculty, will determine the areas and the degree of emphasis on specific subjects. The Council recognizes these factors and expects variation among environmental health curricula. The Council also recognizes that progress toward the development of the "optimum" environmental health curriculum requires the skillful application of imagination and creativity. The Council, therefore, welcomes the opportunity to review innovative programs and curricula in environmental health science and protection.

   **Link to Interpretation in Appendix 1**

IV. Curriculum Table - Criteria for Accreditation of Environmental Health Science and Protection Baccalaureate Curricula (please use Curriculum Table Spreadsheet linked here for reference in order to complete the Self-Study).

A. FOUNDATION COURSES

1. NATURAL SCIENCES:
   All graduates of accredited undergraduate programs shall demonstrate sufficient knowledge and understanding of the natural science principles and practices necessary to competently assess, develop solutions, and communicate environmental
health and protection problems impacting the health of human populations. Natural sciences include the following sciences:

- Biological Sciences
- **Microbiology**
- Chemistry (General and Organic Chemistry)
- Physics
- Natural Science Courses as Defined by the University.

Accomplishing this requires successful completion of a minimum of 24 semester hours or an equivalent number of quarter hours (semester hours x 1.5 = 36 quarter hours) to be divided as follows:

- Biological Sciences with laboratories - at least 3 semester hours
- Microbiology with laboratory - at least 3 semester hours (This criterion may be met through an environmental health microbiology course). Note: Criteria (1) and (2) may be met together through a combined biological sciences/microbiology course so long as the combined course or courses equals 6 or more semester hours or 9 quarter hours
- General Chemistry with laboratories - at least a total 6 semester hours
- Organic Chemistry with laboratory - at least 3 semester hours
- Physics - at least 3 semester hours (laboratory not required)
- Additional natural science courses and/or credits for a total of 24 semester hours (36 quarter hours).

**Link to Interpretation in Appendix 1**

2. COMMUNICATIONS
All graduates are required to have the communication skills to effectively communicate problems and approaches to solving environmental health issues to a variety of stakeholders including: policy makers, other practitioners, and the public. These skills include cultural competency and the ability to speak effectively and persuasively, and to make formal presentations to individuals and groups.

Furthermore, writing skills need to be sufficient to be able to communicate clearly to a variety of audiences.

It is the responsibility of the program to demonstrate that students have acquired these skills as part of the graduation requirement.

To meet this requirement, students must have acquired competence in the following areas:

- Information technology/computer skills
- Public speaking
- Technical writing.

**Link to Interpretation in Appendix 1**
3. MATHEMATICS:
All graduates must have sufficient competency in mathematics to perform and understand the approaches, measurements, and computations commonly used in environmental health science and protection. At a minimum, graduates shall have successfully completed a course in college algebra (higher mathematics courses and/or calculus are recommended).

4. GENERAL EDUCATION:
Students must satisfy the general education requirements for their institution, especially with regard to having appropriate exposure to the humanities and social sciences.

5. OPTIONAL (ELECTIVES):
Other courses may fit into particular programs if they are offered within the university curriculum. These courses may be selected with the consent of the student's advisor.

6. COURSE/CREDIT EQUIVALENCY:
Transfer and prior learning credit (e.g., Advanced Placement Exams (AP), College Level Examination Program (CLEP), etc.) granted by the institution shall be substantiated by institutional criteria and policy. Transfer credits should be applied at the equivalent level that they were taken (i.e., a lower-division course should transfer as a lower-division course and an upper-division course should transfer as an upper-division course). However, all coursework taken at a community or junior college is generally considered lower division. Quarter and semester hour conversions must align with institutional requirements. University policies/documentation regarding the application/acceptance of transfer and prior learning credit should be available for review by Site Visitors when requested.

B. CORE ENVIRONMENTAL HEALTH KNOWLEDGE AREAS

1. METHODOLOGY COURSES
Every baccalaureate student must complete separate course work in the following foundation areas:

- Epidemiology
- Statistical Methods
- Toxicology.

2. CROSS CUTTING KNOWLEDGE AREAS:
All graduates shall have demonstrated foundational knowledge in the development, operation, and management of environmental health programs. This understanding shall include:

- Analysis and Reduction of Environmental Risks (i.e., Risk Assessment, Risk Communication, and Risk Management)
- Environmental Health Management (which shall include Policy Analysis, Emergency Management Systems, and Program Administration)
C. ENVIRONMENTAL HEALTH TECHNICAL AREAS

All graduates from an undergraduate environmental health science program shall be able to demonstrate competency across the breadth of environmental health. Practically, this means that they have been exposed to the broad area of environmental health and have received in-depth instruction in several of the major programs and activities conducted by environmental health organizations.

**List 1: Required exposure in the following technical areas (bold* denotes required technical areas)**

- Air Quality and Health*
- Food Protection*
- Occupational Health and Safety*
- Solid and Hazardous Material and Waste Management*
- Water and Wastewater*
- Zoonotic and Vectorborne Diseases and Their Control*

**List 2. Required exposure for additional technical areas (25% of topics listed is required)**

- All-hazard Preparedness
- Built Environment
- Disease Prevention
- Emerging Hazards
- Emerging Technology (e.g., Nano, Big Data)
- Environmental Health Planning
- Geographic Information Systems
- Geology
- Global Climate Change and Human Health
- Global Environmental Health
- Hydrogeology
- Injury and Violence Prevention
- Institutional Health
- Radiation Health
- Recreational Environmental Health
- Risk Analysis
- Soils
List 3. Required in depth studies in any 4 of the following technical areas (this is in addition to the requirements of Lists 1 and 2)

- **Air Quality and Health**
- All-hazard Preparedness
- Built Environment
- Disease Prevention
- Emerging Hazards
- Emerging Technology (e.g., Nano, Big Data)
- Environmental Health Planning
- **Food Protection**
- Geographic Information Systems
- **Geology**
- Global Climate Change and Human Health
- Global Environmental Health
- Hydrogeology
- Injury and Violence Prevention
- Institutional Health
- **Occupational Health and Safety**
- Radiation Health
- Recreational Environmental Health
- Risk Analysis
- Soils
- **Solid and Hazardous Material and Waste Management**
- **Water and Wastewater**
- Zoonotic and Vectorborne Diseases and Control Measures

**Link to Interpretation in Appendix 1**

D. ENVIRONMENTAL HEALTH PRACTICE

In addition to classroom instruction, it is important that each student be afforded the opportunity to experience environmental health as it is practiced in his or her community or other appropriate setting. Environmental health faculty should maintain liaison with governmental environmental control and public health agencies, institutions, and industries which can provide students with exposure to the applied aspects of environmental health.

**PROFESSIONAL/FIELD EXPERIENCE**

Students shall be exposed to equipment, data collection and data interpretation through a minimum of 180-clock hours total in professional/field practicum, internship, or transcriptable equivalent experiences. From this experience students should demonstrate

- Problem solving skills
- The ability to work as part of a team
• Effective communication
• Knowledge of organizational dynamics.

The Council strongly encourages experiences outside of the university, unless within the university environmental health and safety facilities (non-academia, e.g., EH&S). Research-specific projects may be included in the experience but may not be the only component of the experience.

Documentation must be provided for tracking hours and type of work performed during the internship.

Link to Interpretation in Appendix 1.

V. Baccalaureate Information for Applicants

The Accreditation Council invites formal application for initial approval of a curriculum any time after the first class of students, who have elected to major in environmental health science and protection, have entered their final year of study. The Site Visit and final consideration for accreditation should be requested after the first class has graduated (accreditation cannot be granted until after the first student has been graduated). An institution that anticipates seeking accreditation of its environmental health science and protection program should contact the Accreditation Council Chairperson before proceeding with the Self-Study. The institution should be knowledgeable of the time required by the Council to review the submitted material, potential dates for a Site Visit, and the next meeting date of the Accreditation Council when an application could be reviewed. Programs must also be prepared to pay fees, dues, and charges on time. The Accreditation Council office should be contacted to obtain the name of the current Council Chairperson. Inquiries may be directed to the:

National Environmental Health Science and Protection Accreditation Council
P.O. Box 66057
Burien WA 98166
Office Telephone: 206-522-5272
E-mail address: executive.director@nehspac.org
Web URL: www.nehspac.org

VI. Program Evaluation Report - A Self-Study (please use Self-Study template linked here)

Administrators and faculty of an institution seeking accreditation of an environmental health science and protection program are expected to develop a Program Evaluation Report (also referred to as a “Self-Study”) following the requirements established by the Council. This report will present information and documentation needed by the Council in its evaluation of the program.

Self-Study Report templates, provided with links below, are to be followed in preparing the Self-Study Report and the supplementary information to be submitted with the report. Programs must format their Self-Study Reports using the Undergraduate, Graduate, or combined Self-Study Report Template provided at the links below:
The completed Self-Study document shall be submitted electronically and be preceded by a searchable Table of Contents. The pages in the main body of the Self-Study shall be numbered sequentially. Each appendix shall be numbered, referenced, and linked with that number in the body of the Self-Study. Your footer shall contain the page number and a link to the Table of Contents. Do not change the formatting of the template. The Self-Study Template is linked here.

A complete set of the material shall be submitted to the administrative office by the due date.

Self-Studies will be returned if they do not follow required formatting requirements.

VII. Policy Statement on Conflict of Interest in the Accrediting Process

Programs seeking accreditation or reaccreditation will have the opportunity to review the composition of the Site Visit Team in order to identify potential conflicts of interest. Programs will be able to challenge the inclusion of a particular individual with reasonable cause.

In addition, programs have the obligation to identify Council members or Site Visitors who may have positive relationships with their program that could be deemed as conflicts of interest.

[See EHAC Policy 3.3 for further explanation - linked here]
VIII. Glossary

**Advisory Committee:** Program stakeholders that advise the program on quality assurance.

**Areas/Categories/Topics:** Terms used to describe disciplines of study within environmental health science.

**Basic Understanding:** Knowledge of the terminology, general facts, trends, methodology, principles and theories of the subject area.

**Competency:** Knowledge, skills, and abilities (KSAs) to successfully apply theories, methods, and principles.

**Criteria:** Standards or principles by which something can be judged or decided.

**Faculty FTE (Full Time Equivalent):** Determined by program’s university.

**In-depth Study:** Curriculum which provides students with KSAs in EH to identify sources, evaluate problems, and identify control strategies to minimize negative impacts on environmental and human health. Typically accomplished through a 3 semester-hour course, or equivalent.

**Laboratory:** Hands-on application of concepts, theories or methods resulting in the acquisition of skills.

**Professional/Field Practicum (Internship):** Placement of a student under a preceptor into the practice of environmental health for the purpose of gaining experience in applying the KSAs learned in the classroom to environmental health practice, under controlled circumstances.

**Program Director:** The person responsible for the environmental health program who is a full-time faculty member of the university or college.

**Zoonotic Diseases:** A disease that can be passed between animals and humans.
IX. Appendix - Interpretations

III. Baccalaureate Environmental Health Science and Protection Degree - Curriculum Criteria

B. Specific Objectives - examples of “data literacy”

• “Data literacy” includes management of data sets and generating, interpreting, and applying data. “Data literacy” can be assessed via syllabi, learning outcomes, and products related to courses in epidemiology, statistics, and risk related courses.

Back to III. Baccalaureate Environmental Health Science and Protection Degree – Curriculum Criteria: B. Specific Objectives

IV. Curriculum Table - Criteria for Accreditation of Environmental Health Science and Protection Baccalaureate Curricula

A. FOUNDATION COURSES

1. NATURAL SCIENCES:

   Interpretation:
   • All courses offered to meet this criterion shall be those generally taken by students majoring in one of the natural sciences. Council recognizes institutional restrictions may prevent environmental health students from enrolling in select science majors’ courses. Therefore, programs must demonstrate substituted courses are comparable
   • With the exception of physics, each of the other science requirements designed to meet this criteria shall include a laboratory component, either as a separate course or as an integral part of the course reflected in the credit hours awarded
   • The minimum number of science credit hours shall be calculated based on a standard of a 15 week semester system or a 10 week quarter system. Thus a 3 credit hour semester course would require 4.5 quarter hours of instruction. Since most quarter system courses use whole numbers, the equivalent quarters hours for a 3 credit semester course would be 4-5 quarter hour credits. Assuming equivalent content and instruction, a 4 credit quarter hour course would be under counting the number of credits, while a 5 credit quarter hour course might be over-counting the credits. Therefore, in calculating whether a program on a quarter system meets the minimum requirement of 24 credits in the natural sciences, the total shall be based on the total number of equivalent semester hours multiplied by 1.5 (or 36 quarter hours)
   • Additional Natural Sciences - Council recognizes that institutions calculate credit hours of laboratory courses differently. Therefore, programs may use a combination of additional natural science courses or course hours exceeding the minimum number required above (1-5 in List of Natural Sciences) in order to meet the minimum 24 semester hours(36 quarter hours).

Back to Curriculum Table: A. Foundation Course
2. COMMUNICATIONS

**Interpretation**

These criteria can be met through several approaches:
• Courses
• Portfolios
• A combination of the above.

[Back to Curriculum Table: A. Foundation Courses]

B. CORE ENVIRONMENTAL HEALTH KNOWLEDGE AREAS

1. METHODOLOGY COURSES

**Interpretation**

Separate course work is defined as a stand-alone course of equal credit load as the program’s other core course offerings. EHAC may allow the combination of epidemiology and statistical methods into a single course offering so long as the credit load equals 1.3x or greater credits of the program’s stand alone, single core course offerings.

[Back to Curriculum Table: B Core Environmental Health Knowledge Areas]

C. ENVIRONMENTAL HEALTH TECHNICAL AREAS

**Interpretation**

• Required exposure in List 1
• Required exposure for additional technical areas in List 2 (25% of List 2 required)
• Required in depth study in any 4 technical areas in List 3 - students may individually tailor the in-depth study areas (List 3 includes all of the technical areas)
• Any in-depth course can satisfy the requirements of List 1 or List 2
• Additional topics in environmental health that are not in List 2 or List 3 may be proposed by a Program

• “Exposure” is interpreted as at least 3 instructional hours (single course or multiple courses)
• “In depth” is interpreted as at least 20 instructional hours (single course or multiple courses).

[Back to Curriculum Table: C. Environmental Health Technical Areas]

D. ENVIRONMENTAL HEALTH PRACTICE

**Interpretation**

• Professional/Field Experience, internship or equivalent experiences shall encompass a minimum of 180-clock hours total.
• The Council strongly encourages professional/field experiences outside of the university, so that the student gains field experience. Alternatively, professional/field experiences may be acquired within the university if it has a non-academic environmental health control facility that supports the institution and can
accommodate student involvement. Environmental Health related research projects may be included in the professional/field experience but may not be the only component of the experience. Alternatives to professional/field experience may be considered by the Institution. Programs considering an alternative should contact the Council for further clarification.

Back to Curriculum Table: D. Environmental Health Practice