**Section 1380.210 Approved Engineering Program**

a) The Department of Financial and Professional Regulation-Division of Professional Regulation (Division) shall, upon the recommendation of the State Board of Professional Engineers (the Board), approve an engineering program as reputable and in good standing if it meets the following minimum criteria:

1) The educational institution is legally recognized and authorized by the jurisdiction in which it is located to confer a baccalaureate degree in engineering.

2) Faculty

A) The faculty shall have a sufficient number of full-time, or full-time equivalent, instructors to make certain that the educational obligations to the student are fulfilled. A program at the basic level shall have no fewer than 3 full-time faculty members whose primary commitment is to that program. If an institution relies on part-time faculty members, it shall demonstrate that, in addition to the commitment of at least 3 full-time equivalent faculty members, effective mechanisms are in place to provide adequate levels of student advising and faculty interaction, and faculty control over the curriculum.

B) The faculty shall have demonstrated competence in their area of teaching as evidenced by appropriate degrees from professional colleges or institutions. Other evidence of faculty capability includes non-academic engineering experience, experience in teaching, ability to communicate effectively, participation in professional, scientific and other learned societies, licensure as a professional engineer and an interest in students' curricular activities.

C) Teaching loads shall allow time for research and professional development activities. Stimulation of students' minds requires faculty involvement in scientific and technological development and in instructional innovation.

3) Curriculum

A) The curriculum shall include at least 4 academic years leading to the awarding of the baccalaureate degree while providing integration of the educational experience with the ability to apply the knowledge gained to the identification and solution of practical problems.

B) The overall curriculum shall include a minimum of 120 semester hours or their equivalent (e.g., 180 quarter hours) and shall include at least the following subjects:

i) Mathematics – 15 hours.

Mathematics shall be beyond trigonometry and emphasize mathematical concepts and principles rather than computations. Coursework in calculus (differential and integral) and differential equations at the baccalaureate level are required. Remaining coursework may include, but is not limited to, linear algebra, numerical analysis, matrix theory, probability, statistics, and advanced calculus. Courses in computer usage and/or programming shall not be used to satisfy the mathematics requirement.

ii) Basic Sciences – 15 hours.

Basic sciences must include general chemistry and general calculus-based physics. Chemistry courses shall make up no less than 5 semester credit hours with at least 1 hour of laboratory experience and physics shall make up no less than 8 semester hours. Remaining basic science courses may include, but are not limited to, general biological sciences, earth sciences, advanced chemistry, advanced physics, and advanced biology.

iii) Engineering Sciences – 30 hours.

Courses must be taught within the college/faculty of engineering (unless specifically taught by other faculty and the course substantially meets the standards as required by engineering faculty), have their roots in mathematics and basic sciences, and carry knowledge further toward creative application of engineering principles. Approved engineering courses include, but are not limited to, mechanics, thermodynamics, heat transfer electrical and electronic circuits, material science, transport phenomena engineering economics, and computer science (other than computer programming skills).

iv) Engineering Design – 15 hours.

Coursework involves the conversion of resources to predetermined objectives. Courses must stress the establishment of objectives and criteria, synthesis, analysis, construction, testing, and evaluation to develop student creativity through open-ended problems and consideration of alternative solutions. The inclusion of realistic constraints, such as economic factors, safety, aesthetics, ethics, and social impact is appropriate. Examples of these subjects include design of: circuits, machines, power networks, process equipment and systems, and water treatment.

v) Humanities/Social Sciences – 15 hours.

Coursework includes subjects in philosophy, history, literature, fine arts, religion, sociology, psychology, political science, economics, and foreign language (other than student’s native language). Non-traditional courses may include social responsibility and professional ethics. Subjects such as accounting and management may only satisfy engineering electives and cannot be used to fulfill this course objective.

C) Laboratory experience is essential to an engineering education at both theoretical and practical levels.

D) Computer-based experience shall be included in the program of each student. The program shall include technical computations, problem solving, data acquisition and usage, process control and computer-assisted design. The student shall have access to computational facilities in order to integrate these techniques into the program.

E) The program shall require that the student demonstrate competency in both written and oral communication. Curriculum will include composition courses exploring fundamentals of expository writing.

F) An understanding of ethical, social, economic and safety considerations shall be included in the engineering program.

G) For those institutions that elect to prepare a student to enter the profession at the advanced level, the curriculum shall satisfy the criteria set forth in this Section at the basic level, and shall include at least one year of additional study. That year shall include at least ⅔ of a year of advanced mathematics, basic sciences, engineering sciences and engineering design. Of this component, at least ⅓ of a year shall be devoted to engineering design. The program shall be designed toward a meaningful individual course of study and include thesis, research and/or special projects.

4) Facilities

A) The laboratory facilities shall reflect the requirements of the offered educational program. The laboratory should provide for individual project work by the students and the faculty. The facilities shall be equipped with instruments and scientific equipment of a kind and quality to ensure the effective functioning of the laboratory.

B) The libraries in support of the engineering program shall be both technical and nontechnical, to include books, journals and other reference material for collateral reading in connection with the instructional and research programs and professional work. The library collection shall reflect the existence of an active acquisition policy; this policy shall include specific acquisitions on the request and recommendation of the faculty of the engineering program. There shall be computer-accessible information centers and inter-library loan services for both books and journals. The library collections, whether centralized or decentralized, shall be readily available for use with the assistance of trained library staff, or through an open-stack arrangement, or both.

C) There shall be computer facilities accessible to the engineering students and faculty.

5) The institution shall maintain permanent student records that summarize the credentials for admission, attendance, grades and other records of performance.

b) In determining whether a baccalaureate degree program should be approved, the Division shall take into consideration but not be bound by accreditation by the Accreditation Board for Engineering and Technology (ABET).

c) The Division, upon the recommendation of the Board, has determined that baccalaureate degree engineering programs accredited by the Engineering Accreditation Commission (EAC) of ABET meet the minimum criteria set forth in subsection (a) for an approved engineering program and are, therefore, approved, subject to review.

1) The Division, upon the recommendation of the Board, has determined that the signed Mutual Recognition Program agreement between ABET and the Canadian Engineering Accrediting Board (CEAB) of the Canadian Council of Professional Engineers (CCPE) is considered to have met the minimum criteria as equivalent to the EAC/ABET accredited programs and are, therefore, approved, subject to review.

2) The Division, upon the recommendation of the Board, does not recognize ABET "substantially equivalent" programs as meeting the minimum criteria set forth in subsection (a) for an approved engineering program and are, therefore, not approved.

d) The Division, upon the recommendation of the Board, has withdrawn program approval of the following programs accredited by the Engineering Accreditation Commission of ABET. Subsequent to notification, the Board reviewed the programs and determined that they do not meet the requirements of this Section and are, therefore, no longer approved. An applicant graduating from any of the following programs will have his or her transcript reviewed on a case-by-case basis to determine if he or she meets Illinois requirements:

1) Purdue University: Geomatic Engineering

2) California State, Fresno: Civil and Geomatic Engineering and Construction, Major in Geomatics

3) Ohio State: Geomatic Engineering

4) New Mexico State: Surveying Engineering

5) Ferris State University: Surveying Engineering

6) University of Maine: Surveying Engineering Technology

e) Withdrawal of Program Approval

1) The following are grounds for withdrawal of approval of an engineering program or a program leading to a degree in basic engineering.

A) Non-compliance with any provisions of the Professional Engineering Practice Act of 1989 [225 ILCS 325] (the Act);

B) Non-compliance with any provision of this Part;

C) Fraud or dishonesty in furnishing documentation for evaluation of the program; or

D) Failure to continue to meet the criteria of an approved program as set out in this Section.

2) If the Board has reason to believe there has been any fraud or dishonesty in the furnishing of any documentation for the evaluation of a program on the part of any licensee, it shall refer such matter to appropriate Division personnel for any disciplinary action which might be appropriate under the Act.

3) A program whose approval is being reconsidered by the Division shall be given 15 days written notice prior to any recommendation by the Board and may either submit written comments or request a hearing before the Board.

f) Evaluation of Newly Submitted Programs

1) An educational institution with a baccalaureate degree program that has not been evaluated will cause to be forwarded to the Division documentation concerning the criteria in this Section.

2) Once the Division has received the documentation or after 6 months have elapsed from the date of application, whichever is later, the Board will evaluate the program based on all documentation received from the school and any additional information the Division has received that will enable the Board to evaluate the program based on the criteria specified in this Section.

(Source: Amended at 47 Ill. Reg. 876, effective January 5, 2023)