Engineering Ethics

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Introduction

Licensed professionals must be familiar with the standards of professional conduct in order to practice their profession in any state. While detailed standards vary from state to state, the basic requirements for professional conduct are very similar throughout the United States. This course covers the definition of a profession and professionalism, fundamental ethical principles, and the professional obligations contained in the NSPE's Code of Ethics. In addition, this course discusses issues related to professional registration, certification, continuing education, and the types of professional misconduct prohibited by all licensing boards.

What Is a Profession?

According to Dictionary.com, the word "profession" may indicate

1. a vocation requiring knowledge of some department of learning or science;
2. any vocation or business;
3. the body of persons engaged in an occupation or calling.

So the word "profession" could mean different things to different people. But at its core, it's meant to be an indicator of trust and expertise.

In the realm of professional ethics, a profession is a group of disciplined individuals who adhere to certain ethical standards. Members of a profession possess special knowledge and skills in a widely-recognized body of learning derived from education and training at a high level. Examples of such professional groups include the American Bar Association, the Association of American Physicians and the National Society of Professional Engineers. Among engineering communities, there are more specialized groups such as the American Society of Civil Engineers (ASCE), the Institute of Electrical and Electronics Engineers (IEEE), and the American Society of Mechanical Engineers (ASME), to name just a few. Each of these groups is poised to promote knowledge sharing, career enrichment, and skills development among its members.

A professional is a member of a profession. Governed by codes of ethics, professionals proclaim commitment to competence, integrity and morality, and the promotion of the public good within their expert domain.

What Is Professionalism?

Professionalism comprises the personally held beliefs about one's own conduct as a professional. It's often linked to the upholding of the principles, laws, ethics, and conventions of a profession as a way of practice.

Professionalism encompasses a number of different attributes, and, together, these attributes identify and define a professional. These attributes include:

1. Specialized knowledge. Professionals are known for their specialized knowledge. They have made a deep personal commitment to develop and improve their skills and, oftentimes, they have the degrees and certifications that serve as the foundation of this knowledge.
2. Competency. Professionals get the job done right. They can apply their knowledge to various situations, work as a good team member, effectively address client and stakeholder needs, and adapt to new and changing requirements. Besides being reliable and skillful, they strive to keep their promises and deliver results on time and under budget.
3. Honesty and integrity. Professionals keep their word and can be trusted. They do not compromise their values and will do the right thing, even when it means taking a harder road. In addition, professionals are humble – if a part of a project or job falls outside their scope of expertise, they will seek for help from other qualified professionals.
4. Accountability. Professionals hold themselves accountable for their thoughts, words, and actions, especially when they have made a mistake. This personal accountability is closely tied to honesty and integrity, and is a vital element in professionalism.
5. Self-Regulation. Many professions self-regulate their members to protect the public interest and to maintain the honor and reputation of the profession.
6. Image. Professionals project positive images about themselves through appearance and reputation. They can convey their image by the way they dress, the way they speak, and the way they respond to others.

To improve your professionalism, you need to focus on improving in each of the above areas.

Professional Codes of Ethics

A code of ethics is sometimes called a code of practice, and is adopted by a profession or by a governmental or non-governmental organization to regulate that profession. It prescribes the mission and values of a professional organization, and the ethical principles based on the organization's core values and the standards to which the professional is held.

Many architecture, engineering and land surveying organizations have adopted codes of ethics that their members must follow. Generally, these codes are quite similar and are based on a few fundamental principles. For example, the National Society of Professional Engineers (NSPE) has the following fundamental canons in their Code of Ethics for Engineers:

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health, and welfare of the public.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

Some codes of ethics expand their ethical guidelines into detailed rules of practice which can be several pages long while others, such as the one adopted by the Institute of Electrical and Electronics Engineers (IEEE):

IEEE Code of Ethics

We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities we serve, do hereby commit ourselves to the highest ethical and professional conduct and agree:

1. to accept responsibility in making decisions consistent with the safety, health, and welfare of the public, and to disclose promptly factors that might endanger the public or the environment;
2. to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;
3. to be honest and realistic in stating claims or estimates based on available data;
4. to reject bribery in all its forms;
5. to improve the understanding of technology; its appropriate application, and potential consequences;
6. to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;
7. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others;
8. to treat fairly all persons and to not engage in acts of discrimination based on race, religion, gender, disability, age, national origin, sexual orientation, gender identity, or gender expression;
9. to avoid injuring others, their property, reputation, or employment by false or malicious action;
10. to assist colleagues and co-workers in their professional development and to support them in following this code of ethics.

Professional Obligations

As licensed professionals, architects, engineers, geologists and land surveyors have many professional obligations to society. In their Code of Ethics, the National Society of Professional Engineers proclaims the following obligations for their members:

1. Engineers shall be guided in all their relations by the highest standards of honesty and integrity.
    a. Engineers shall acknowledge their errors and shall not distort or alter the facts.
    b. Engineers shall advise their clients or employers when they believe a project will not be successful.

c. Engineers shall not accept outside employment to the detriment of their regular work or interest. Before accepting any outside engineering employment, they will notify their employers.
d. Engineers shall not attempt to attract an engineer from another employer by false or misleading pretenses.
e. Engineers shall not promote their own interest at the expense of the dignity and integrity of the profession.

2. Engineers shall at all times strive to serve the public interest.
   a. Engineers are encouraged to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health, and well-being of their community.
   b. Engineers shall not complete, sign, or seal plans and/or specifications that are not in conformity with applicable engineering standards. If the client or employer insists on such unprofessional conduct, they shall notify the proper authorities and withdraw from further service on the project.
   c. Engineers are encouraged to extend public knowledge and appreciation of engineering and its achievements.
   d. Engineers are encouraged to adhere to the principles of sustainable development in order to protect the environment for future generations.
3. Engineers shall avoid all conduct or practice that deceives the public.
   a. Engineers shall avoid the use of statements containing a material misrepresentation of fact or omitting a material fact.
   b. Consistent with the foregoing, engineers may advertise for recruitment of personnel.
   c. Consistent with the foregoing, engineers may prepare articles for the lay or technical press, but such articles shall not imply credit to the author for work performed by others.
4. Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of any present or former client or employer, or public body on which they serve.
   a. Engineers shall not, without the consent of all interested parties, promote or arrange for new employment or practice in connection with a specific project for which the engineer has gained particular and specialized knowledge.
   b. Engineers shall not, without the consent of all interested parties, participate in or represent an adversary interest in connection with a specific project or proceeding in which the engineer has gained particular specialized knowledge on behalf of a former client or employer.
5. Engineers shall not be influenced in their professional duties by conflicting interests.
   a. Engineers shall not accept financial or other considerations, including free engineering designs, from material or equipment suppliers for specifying their product.

b. Engineers shall not accept commissions or allowances, directly or indirectly, from contractors or other parties dealing with clients or employers of the engineer in connection with work for which the engineer is responsible.

6. Engineers shall not attempt to obtain employment or advancement or professional engagements by untruthfully criticizing other engineers, or by other improper or questionable methods.
   a. Engineers shall not request, propose, or accept a commission on a contingent basis under circumstances in which their judgment may be compromised.
   b. Engineers in salaried positions shall accept part-time engineering work only to the extent consistent with policies of the employer and in accordance with ethical considerations.
   c. Engineers shall not, without consent, use equipment, supplies, laboratory, or office facilities of an employer to carry on outside private practice.
7. Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other engineers. Engineers who believe others are guilty of unethical or illegal practice shall present such information to the proper authority for action.
   a. Engineers in private practice shall not review the work of another engineer for the same client, except with the knowledge of such engineer, or unless the connection of such engineer with the work has been terminated.
   b. Engineers in governmental, industrial, or educational employ are entitled to review and evaluate the work of other engineers when so required by their employment duties.
   c. Engineers in sales or industrial employ are entitled to make engineering comparisons of represented products with products of other suppliers.
8. Engineers shall accept personal responsibility for their professional activities, provided, however, that engineers may seek indemnification for services arising out of their practice for other than gross negligence, where the engineer's interests cannot otherwise be protected.
   a. Engineers shall conform with state registration laws in the practice of engineering.
   b. Engineers shall not use association with a nonengineer, a corporation, or partnership as a "cloak" for unethical acts.
9. Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.
   a. Engineers shall, whenever possible, name the person or persons who may be individually responsible for designs, inventions, writings, or other accomplishments.
   b. Engineers using designs supplied by a client recognize that the designs remain the property of the client and may not be duplicated by the engineer for others without express permission.
   c. Engineers, before undertaking work for others in connection with which the engineer may make improvements, plans, designs, inventions, or other records that

may justify copyrights or patents, should enter into a positive agreement regarding ownership.

d. Engineers' designs, data, records, and notes referring exclusively to an employer's work are the employer's property. The employer should indemnify the engineer for use of the information for any purpose other than the original purpose.

e. Engineers shall continue their professional development throughout their careers and should keep current in their specialty fields by engaging in professional practice, participating in continuing education courses, reading in the technical literature, and attending professional meetings and seminars.

Conflicts of Interest

Conflicts of Interest (COI) are situations that have the potential to undermine the impartiality of a person because of the possibility of a clash between the person's self-interest and professional interest or public interest. There are three types of COI:

1. Actual Conflict of Interest
2. Apparent Conflict of Interest
3. Potential Conflict of Interest

An actual conflict of interest is one where the person making the decision or someone close to him, like a spouse, child, etc., would benefit from his decision. Suppose, for example, that a professional engineer is a school board member and his sister-in-law is applying for an administrative job in that school system. He votes to hire her for this lucrative position. That's an actual or real conflict of interest, since he might be voting for her not because she is the best one for the job, but because he wants his brother to benefit from her income.

An apparent conflict of interest is one where no prohibited benefit exists, but it might appear to a reasonable person that one does. For instance, an architect participating in a decision-making process which awards a contract to a company employing over 1,000 persons including his brother may appear to have a conflict of interest, even though his brother does not have any ownership in that company.

A potential conflict refers to a situation that does not necessarily constitute or appear to constitute a COI but where there is a reasonable possibility of an actual or apparent COI coming into play. For example, Tim works at company X, which has as a supplier company Y, and Tim’s daughter Debby is considering applying for a job at Y. This is not yet an actual or apparent conflict because Debby has not yet moved her job plans forward. But (depending on a variety of facts not provided in this example) the potential for a conflict is there.

A professional must strive to avoid conflicts of interest because they may lead to abuse of the trust that people have in professionals.

The following are some general rules of thumb to help a design professional eliminate or minimize conflicts of interest:

1. A licensed professional shall conscientiously avoid conflict of interest with their employer or client and shall promptly inform their employer of any business association, interests, or circumstances which could influence their judgment or the quality of their services. When unavoidable, the engineers shall, in writing, disclose the full circumstances to their employer or client, and assure that the conflict will in no manner influence the professional engineers' judgment or the quality of their services.
2. A licensed professional shall not accept compensation, financial or otherwise, from more than one party for services on the same project or for services pertaining to the same project unless the circumstances are fully disclosed to and agreed to by all interested parties.
3. A licensed professional shall not solicit or accept financial or other valuable considerations, directly or indirectly, from material or equipment suppliers, or their representatives, for specifying their products.
4. A licensed professional shall not solicit or accept gratuities, directly or indirectly, from contractors, their agents, or other parties in connection with work for which they are responsible.
5. A licensed professional in public service as a member, advisor, or employee of a governmental body or department shall not participate in considerations or actions with respect to matters involving them or their organization's private or public engineering practices.
6. A licensed professional shall not solicit or accept a contract from a governmental body on which a principal or officer of their organization serves as a member.

Licensure, Registration and Practice

In the United States, only licensed and registered professionals are authorized to offer architecture, engineering, geological and land surveying services to the general public. The regulations for these four professions are very similar throughout the United States. We will use "engineering profession" as an illustration in this course.

The term "professional engineer" means an individual who is qualified, by reason of knowledge of mathematics, the physical sciences, and the principles by which mechanical properties of matter are made useful to man in structures and machines, acquired by professional education and practical experience, to engage in the practice of professional engineering.

To become a licensed Professional Engineer (PE), one needs to:

1. Have adequate education (normally a four-year degree in engineering from an accredited engineering program);
2. Possess sufficient engineering experience (at least four years of progressive engineering experience under a PE); and
3. Pass two examinations successfully (FE and PE exams)

After obtaining their PE licenses, professional engineers must maintain their registrations with their state licensing boards in order to provide professional engineering services, which includes consultation, investigation, evaluation, planning, designing, or responsible supervision of construction or operation, in connection with any public or private utilities, structures, buildings, machines, equipment, processes, works, or projects, wherein the public welfare or the safeguarding of life, health, or property is concerned or involved.

Many states also require that the business entity hold a Certificate of Authorization (COA) in order to offer engineering services under the name of an Association, Fictitious Name, Partnership, Corporation or Limited Liability Company. States requiring a COA include Florida, Georgia, New York, North Carolina, South Carolina, to just name a few.

In the United States, the title "professional engineer" is legally protected in many states, meaning that it is unlawful to use it to offer engineering services to the public unless permission, certification, or other official endorsement is specifically granted by that state, through a professional engineering license, an "industrial exemption," or certain other titles such as "operating engineer." Employees of state or federal agencies may also call themselves engineers if that term appears in their official job title.

Rules of Practice

To protect the health, safety and welfare of the public, many state licensing boards have established standards of professional conduct or rules of practice for their licensees, which are similar to codes of ethics developed by professional associations. The following example illustrates the standards of professional conduct contained in Chapter 180-6 of the Georgia Administrative Procedures Act, O.C.G.A.

Excerption from Chapter 180-6

Rule 180-6-.02 Protection of the Public

The engineer or land surveyor shall at all times practice in such a manner as to protect the safety, health and welfare of the public. If a registrant's engineering or land surveying judgment is overruled under circumstances where the safety, health or welfare of the public are endangered, he/she shall inform the proper authorities and his/her employer of the situation as may be appropriate.

Rule 180-6-.03 Rules of Practice

(1) The engineer or land surveyor shall perform services only in areas of his/her competence. The engineer or land surveyor shall undertake to perform engineering or land surveying assignments only when qualified by education or experience in the specific technical field of professional engineering or land surveying involved.

(2) The engineer or land surveyor may accept an assignment requiring education or experience outside of his/her own field of competence, but only to the extent that his/her services are restricted to those phases of the project in which he/she is qualified. All other phases of

such project shall be performed by qualified associates, consultants or employees who shall sign, seal, and be responsible for such other phases or technical segments.

Rule 180-6-.04 Statement and Testimony

(1) The engineer or land surveyor shall be completely objective and truthful in issuing public statements, reports or testimony. He/she shall include all relevant and pertinent information in those statements, reports or testimony.

(2) The engineer or land surveyor, when serving as an expert or technical witness before any court, commission, or other tribunal, shall express an opinion only when it is founded upon adequate knowledge of the facts at issue. That expression shall reflect a background of technical competence in the subject matter, and an honest conviction of the accuracy and propriety of his/her testimony.

(3) No engineer or land surveyor licensed under O.C.G.A. Chapter 15, Title 43, shall issue statements, criticisms, or arguments on engineering or land surveying matters connected with public policy which are inspired or paid for by an interested party or parties unless he/she has prefaced such comments by explicitly identifying the party on whose behalf he/she is speaking. The engineer or land surveyor must at the same time reveal the existence of any pecuniary interest he/she may have in the matters.

Rule 180-6-.06 Conduct

(1) The engineer or land surveyor shall solicit or accept professional employment only on the basis of his/her qualifications and competence for proper accomplishment of the work. No engineer or land surveyor may provide a fee proposal to a potential client until he/she
   (a) established or reviewed the scope of services for the project,
   (b) determined that, based on his/her review of the scope of services, that he/she is competent to provide the professional services required, and
   (c) made his/her qualifications known to the prospective client.

(1) On proposals including more than one engineer or land surveyor, each individual shall be responsible for complying with this rule for his/her respective portion of the proposal. The engineer or land surveyor shall not offer to pay, either directly or indirectly, any commission, political contribution, gift, or other consideration in order to secure work, exclusive of securing salaried positions through employment agencies.

(2) The engineer or land surveyor shall not falsify or permit misrepresentation of his/her or his/her associate's academic or professional qualifications. He/she shall not misrepresent or exaggerate his/her degree of responsibility for prior assignments in brochures or other presentations for the solicitation of employment. He/she shall not misrepresent pertinent facts concerning employers, employees, associates, joint ventures, or his/her or their past accomplishments with the intent and purpose of enhancing his/her qualifications or work.

Rule 180-6-.07 Ethics

(1) The engineer or land surveyor shall associate only with reputable persons or organizations. The engineer or land surveyor shall not knowingly associate with or permit the use of his/her name, or firm name, in a business venture by any person or firm which he/she knows, or has reason to believe, is engaging in business or professional practices of a fraudulent or dishonest nature.

(1) If the engineer or land surveyor has knowledge or reason to believe that another person or firm may be in violation of any of these provisions or of O.C.G.A. 43-15, he/she shall promptly present such information to the Board in writing and shall cooperate with the Board in furnishing such further information or assistance as may be required by the Board.

End of Excerption from Chapter 180-6

Professional Certification

During the practice of engineering, a professional engineer is sometimes asked to provide a certification letter about a project/product. The term "certification" relating to professional engineering means a signed statement based upon facts and knowledge known to the registrant and is not a guarantee or warranty, either expressed or implied.

When a professional engineer is presented with a certificate to be signed or sealed, he or she should carefully evaluate that certification to determine if the certification:

a. relates to matters which are within the technical competence of the engineer;
b. involves matters which are within the scope of services actually provided by the engineer or;
c. relates to matters which were prepared under the supervision, direction and control of the engineer.

When writing his/her own certification letter, a professional engineer must include the following information at a minimum: his/her contact information, project name and location, date of inspection if applicable, status of the project, scope of the certification, and seal & signature.

Professional Misconduct

Knowing what you cannot do is more important than knowing what you can do.

The following list contains detailed descriptions and discussion of types of professional misconduct prohibited by all state licensing boards:

1. Failing to comply with laws and regulations. An example of this could be a violation of a building code provisions in the design of a hospital.
2. Exercising undue influence on a client for improper financial gain.
3. Offering or receiving a kickback from a third party. Kickbacks include money, goods, and services.

4. Fee-splitting with an unqualified third party. For example, a licensee should not share his fee with a city official who helped him secure the project.
5. Practicing without moral fitness. Having good moral character is a part of initial licensure requirement.
6. Willfully making or filing a false report or failing to file a report required by the laws and rules. This includes obstructing such filing or inducing someone to do so.
7. Violating confidentiality. A licensee cannot reveal personally identifiable facts, data or information obtained in a professional capacity without the prior consent of the client, except as authorized or required by law.
8. Practicing or offering to practice beyond the areas of a licensee's competence is certainly an unprofessional conduct. However, there is an exception to this rule: a licensee can do so in an emergency situation where a person's life or health is in danger.
9. Delegating professional responsibilities to a person when the licensee knows or has reason to know that such person is not qualified, by training, by experience or by licensure, to perform them.
10. Performing professional services which have not been duly authorized by the client. You should always seek the client's authorization for an additional service if you expect to be compensated for the additional service.
11. Advertising improperly. You cannot advertise or solicit work in a manner that is not in the public interest. This includes false or misleading claims in your advertisements.
12. Failing to respond in a timely manner to the Board. Whenever you receive written communications from the Board, you are normally required to respond within 30 days and to make available any relevant records with respect to an inquiry or complaint.
13. Violating any terms of probation or conditions or limitations imposed on the licensee by the Board.
14. Being associated with any fraudulent activity.
15. Failing to report in writing to the owner or to the owner's designated agent any unauthorized or improperly authorized substantial disregard, by any contractor of plans or specifications for construction or fabrication, when professional observation or supervision of the work is provided for in the agreement between the owner and the design professional or when supervision of the work is under the control of the design professional.
16. Certifying by affixing the licensee's signature and seal to documents for which the professional services have not been performed by, or thoroughly reviewed by, the licensee; or failing to prepare and retain a written evaluation of the professional services represented by such documents in accordance with the board requirements.
17. Failure by a licensee to maintain for the period prescribed by the Board all preliminary and final plans, documents, computations, records, and professional

evaluations prepared by the licensee, or the licensee's employees, relating to work to which the licensee has affixed his seal and signature.

18. Having a substantial financial interest, without the knowledge and approval of the client or employer, in any products or in the bids or earnings of any contractor, manufacturer, or supplier on work for which the professional has responsibility.
19. Improper sharing of fees for professional services with any person other than: a partner, employee, associate in a professional firm or corporation, subcontractor or consultant.
20. Accepting any form of compensation from more than one party for services on the same project without fully disclosing the circumstances and receiving approval from all interested parties.
21. Failing to avoid actual conflicts of interest.
22. Renewing or reactivating a license without completion of the required continuing education hours.

As a licensed PE, you also need to get familiar with the Board Laws and Rules and understand the professional misconduct prohibited by your licensing board. For example, a Florida engineer must review Section 19.001(6) in Chapter 61G15 of the Florida Administrative Code to become aware of the acts that are considered to be unprofessional.

Disciplinary Actions

A member who violates the code of ethics of an organization is subject to disciplinary actions by his/her peers. Many state boards also periodically disclose in their newsletters the disciplinary actions taken by the Boards against licensees who violated the Board rules. The most common types of violations are:

1. Performed services outside his/her area of competence.
2. Practiced engineering without being licensed in the state of the project.
3. Practiced or offered to practice engineering while not properly licensed.
4. Failed to have a resident licensed professional in responsible charge in each office.
5. Failed to properly sign, seal, and date documents.
6. Affixed his/her seal to work not done under his/her direct supervision or responsible charge and without preparing his/her own evaluations and written report.
7. Affixed his/her seal to inadequate design documents, failing to protect the public.

Other types of violations include:

8. Produced a deficient, substandard or inaccurate report, failing to protect the public.
9. Contracted with a non-licensed individual to provide certain professional services.
10. Failed to avoid conflicts of interests.

When a licensing board finds any person guilty of any violation of the Board rules, it may enter an order imposing one or more of the following penalties:

a. Denial of an application for licensure.

b. Revocation or suspension of a license.
c. Imposition of an administrative fine for each count or separate offense.
d. Issuance of a reprimand.
e. Placement of the licensee on probation for a period of time and subject to such conditions as the board may specify.
f. Restriction of the authorized scope of practice by the licensee.
g. Restitution.

To avoid the above violations and penalties, it is highly recommended for all licensees to periodically review the standards of professional conduct and the board regulations. If a licensee's engineering judgment is overruled under circumstances where the safety, health or welfare of the public is endangered, he/she shall inform the proper authorities and his/her employer of the situation as may be appropriate.

Continuing Education

Many state boards for licensed professionals require their licensees to maintain their competency through Continuing Education (CE). In this section, we will use the continuing education requirements established by the Georgia State Board for Professional Engineers and Land Surveyors as an example.

The continuing education requirement in Chapter 180-11 of the Georgia Administrative Procedures Act is intended to be comprehensive as to the rules and laws pertaining to the professional practice of Engineering and Land Surveying in Georgia. The CE requirements for other states are very similar. Each licensee shall review his/her state version periodically so that he/she has a thorough understanding of the updated state regulations.

Chapter 180-11 Continuing Professional Competency

Rule 180-11-.01 Introduction

Beginning January 1, 1997, as stated in O.C.G.A. 43-15-6(b), ". . . which begins after the 1996 renewal cycle," every registrant shall meet the continuing professional competency requirements of these rules for professional development as a condition for licensure renewal.

Rule 180-11-.02 Definitions

Terms used in this section are defined as follows:

(a) Professional Development Hour. A contact hour (nominal) of instruction or presentation. The common denominator for other units of credit. The numerical unit of measure used in calculating compliance with this Chapter is a Professional Development Hour or PDH. All units and hours attributed to the courses and activities acceptable in satisfying this Chapter's requirement are translated into PDH's by operation of Rule 180-11-.04 of this Chapter.

(b) Course/Activity. Any qualifying course or activity with a clear purpose and objective which will maintain, improve, or expand the skills and knowledge relevant to the land surveyor's or professional engineer's practice.

(c) Continuing Education Course/Unit.

1. Continuing Education Course. A course, seminar, workshop or other professional or technical presentation or activity taken or attended for the purpose of maintaining, improving, or expanding the skills and knowledge relevant to the registrant's practice.
2. Continuing Education Unit. The unit of measure attributed to Continuing Education Courses is a Continuing Education Unit or CEU. Ten (10) hours of class in a Continuing Education Course equals one (1) Continuing Education Unit.

(d) College Courses/Unit Measure.

1. College Course. When used in this Chapter, a College course is a technical course in a curriculum which has been accredited by the Accreditation Board for Engineering and Technology, or a technical course that is specifically relevant to engineering or surveying, which is offered by a college, university, or other institution.

(e) College/Unit Semester/Quarter Hour. A College/Unit Semester/ Quarter Hour is a unit of measure attributed by the offering college, university, or institution, to a particular course, which is translated into PDH's by operation of Rule 180-11-.04 of this Chapter.

(f) Registrant. When used in this Chapter, a person who is licensed as either a professional engineer or a land surveyor is deemed to be a registrant.

(g) Dual Registrant. When used in this Chapter, a person who is licensed as both a professional engineer and a land surveyor is deemed to be a dual registrant.

(h) Board. The State Board of Registration for Professional Engineers and Land Surveyors.

(i) Sponsor. A sponsor is an organization, college, university, institution, or individual which provides a course/activity for which the professional engineer or land surveyor seeks to obtain Professional Development Hour credit.

(j) Successful Completion of a Course/Activity. Satisfactory completion of a course/activity taken for the purpose of obtaining PDH's means fulfilling the course or activity's requirements and obtaining a certificate of completion or its equivalent.

Rule 180-11-.03 Requirements

(1) Professional Engineers. Every professional engineer is required to obtain thirty (30) PDH's each twenty-four (24) month (Biennial) renewal period. If a professional engineer exceeds the requirements in any biennial renewal period, a maximum of fifteen (15) PDH's may be carried forward into the subsequent renewal period.

(2) Land Surveyors. Every land surveyor is required to obtain fifteen (15) PDH's each twenty-four (24) month biennial renewal period. In addition, every land surveyor must ensure that, once every four (4) years, at least six (6) PDH's in "Minimum Technical Standards" be included in their

PDH's acquired. If a land surveyor exceeds the requirements in any biennial period, a maximum of seven and one-half (7.5) PDH's may be carried forward into the subsequent renewal period.

(3) Dual Registrants. The person with a dual license is required to obtain thirty (30) PDH units for a twenty-four (24) month (Biennial) renewal period. If a dual registrant exceeds the requirement in any Biennial renewal period, a maximum of fifteen (15) PDH's may be carried forward into the subsequent renewal period. At least one-third (1/3) of the PDH's in a renewal period must be obtained in engineering, and one-third (1/3) in surveying. The remaining units may be in either field, at the discretion of the registrant.

(4) PDH's may be earned as follows:

- (a) Successful completion of college courses.
- (b) Successful completion of continuing education courses.
- (c) Successful completion of correspondence, televised, videotaped, audiotaped, and other short courses/tutorials taken for the purpose of maintaining, improving, or expanding the skills and knowledge relevant to the land surveyor's or professional engineer's practice.
- (d) Presenting or attending seminars, in-house courses, workshops, or professional or technical presentations made at meetings, conventions or conferences which are relevant to the land surveyor's or professional engineer's practice.
- (e) Teaching or instructing in any area relevant to the land surveyor's or professional engineer's practice.
- (f) Authoring published papers, articles, or books in any area relevant to the land surveyor's or professional engineer's practice.
- (g) Active participation in professional or technical societies. (For professional engineers only).
- (h) Receiving patents in any area relevant to the land surveyor's or professional engineer's practice.

Rule 180-11-.04 Units

The conversion of other units of credit to Professional Development Hours is as follows:

- (1) One (1) college or unit semester hour: 45 PDH
- (2) One (1) college or unit quarter hour: 30 PDH
- (3) One (1) Continuing Education Unit: 10 PDH
- (4) One (1) Hour of professional development in coursework, seminars, or professional or technical presentations made at meetings, conventions, conferences, or examination preparation.
- (5) For teaching of professional development coursework as in 180-11-.04, apply a multiple of two (2). Teaching credit valid for teaching a course or seminar for the first time only. Teaching does not apply to full-time faculty.
- (6) Authorizing published papers, articles, or books in any area relevant to the land surveyor's or professional engineer's practice: 10 PDH
- (7) Active participation in professional and technical society (for professional engineers only): 2 PDH

(8) Each patent in any area relevant to the land surveyor's or professional engineer's practice: 10 PDH

Rule 180-11-.05 Determination of Credits The Board has the final authority regarding:

a. Approval of courses, classes, seminars, meetings, and all other methods of satisfying the requirements of this Chapter; and
b. The number of PDH's allocated to each course, class, seminar, meeting, and any other method of satisfying the requirements of this Chapter.

Rule 180-11-.06

To ensure compliance of continuing education, the Board shall randomly audit a number of registrants. Registrants licensed by way of examination or comity, shall be exempt from continuing education requirements for their first renewal period. Maintaining records to be used to support PDH's Claimed, is the responsibility of the registrant. Records required include:

a. A log showing the type of activity, sponsoring organization, location, duration, instructor's or speaker's name, and PDH's earned.
b. Attendance verification records in the form of completion certificates, or other documents supporting evidence of attendance; or records as maintained by professional organizations, or other similar repositories designated by the Board.
c. The log and records described in Rule 180-11-.06(a) and (b) must be maintained for a period of four years and copies may be requested by the Board for audit verification purposes.

Rule 180-11-.07 Exemptions

A registrant is exempt from the professional development education requirements under any of the following circumstances:

(1) Registrants licensed by way of examination or comity, shall be exempt for their first renewal period.
(2) A professional engineer serving on temporary duty in the armed forces of the United States for a period of time exceeding one hundred twenty (120) consecutive days shall be exempt from obtaining 15 of the professional development hours required during that biennial period in which the majority of the days of duty fall. Likewise, a land surveyor shall be exempt from obtaining 7.5 professional development hours during that biennial period.
(3) Registrants experiencing physical disability, illness, or other extenuating circumstances as approved by the Board may be exempt. Supporting documentation must be furnished to the Board.
(4) Registrants over the age of 65 who have applied for an inactive license, who list their occupation as "Retired" or "Inactive" on the Board-approved renewal form, and who further

certify that they are no longer receiving any remuneration from providing professional engineering or land surveying services shall be exempt from professional development hours. In the event such a person elects to return to active practice of professional engineering or land surveying, professional development hours must be earned as described in " 180- 11-.08 Reinstatement" before returning to active practice.

(5) Individuals who qualify for exemption by way of paragraph (4) above may continue to use the words Professional Engineer (or P.E.), or Land Surveyor (or L.S.) as appropriate, after their names as long as they continue to fall under the restrictions specified and are not actively practicing engineering or land surveying.

Rule 180-11-.08 Reinstatement

A registrant may bring an inactive or suspended (provided all other conditions of the suspension are filled) license to active status by obtaining all delinquent PDH's. A MINIMUM OF 15 PDH's are required for each year in an inactive or suspended status for professional engineers and 7.5 PDH's for land surveyors, up to a maximum of 30 PDH's for professional engineers and 15 PDH's for land surveyors.

Rule 180-11-.09 Comity/Out-of-Georgia Resident

The Board shall recognize the continuing education requirements imposed by other states to the extent that such continuing education courses meet the requirements imposed by the Board. Comity/Out-of-Georgia residents will be required to keep recordkeeping as listed under Rule 180-11-.06.

End of Excerption from Chapter 180-

Course Summary

To safeguard the life, health, property and welfare of the public, licensed professionals must adhere to the standards of professional conduct and the codes of ethics related to their professions. A licensee who violates ethical guidelines may be subject to disciplinary action, such as a fine, reprimand, probation, suspension or revocation of his/her license.

References

The following resources are used to develop this course:

(1) Code of Ethics for Engineers published by the National Society of Professional Engineers
(2) Code of Ethics published by the Institute of Electrical and Electronics Engineers
(3) Ethics Guidelines for Professional Conduct published by the American Society of Civil Engineers
(4) Chapter 180-6 of the Georgia Administrative Procedures Act, O.C.G.A.