# 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

Purchase this course to see the remainder of the technical materials.