



A SunCam online continuing education course

Ethics for Engineers

Based on the NSPE “Code of Ethics for Engineers”

by

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Introduction

In this course, we will use fictional case studies and characters to illustrate a few examples of unethical behavior. The reference document that we have adopted for this course is the National Society of Professional Engineers “Code of Ethics for Engineers” which is reprinted in appendix “A” by permission of the National Society of Professional Engineers (NSPE) www.nspe.org. You may also download the NSPE “Code of Ethics for Engineers” at <https://www.nspe.org/resources/ethics/code-ethics>.

When you have completed the course, we welcome your review comments and course rating. Review comments are the best place to share your views with other engineers and, you may make your comments anonymously if you prefer. The link for reviewing the course is at the end of this document.

Case 1

Simon deHolland, P.E. is a salaried structural engineer serving as a construction inspector on a new twenty-story Ajax Hotel building. Simon’s employer, Village Engineering Co., holds the construction services contract with Ajax Hotels.

The general contractor on the job is Simon’s former employer, Rise-High Construction Company. After leaving Rise-High as a full-time employee, Simon continued to perform occasional jobs for the contractor on a part-time basis. One such task was the preparation of shop drawings for the Ajax Hotel project.

Simon did not disclose the “moonlighting” relationship with Rise-High to his current employer, Village Engineering or to the client, Ajax.

Case 2

Margaret Crosthwaite, P.E. worked as a quality control engineer for Bakersfield Motors, a US tractor-trailer, and light truck manufacturer. The company switched to a new, offshore supplier of brake shoes and brake drums to save money, but Margaret’s product testing demonstrated that the new brake shoes were inferior and unsafe. She rejected the first shipment but her supervisor overruled her. When she complained to senior management, her supervisor abruptly fired her for insubordination.



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After her termination, Margaret wrote to the National Highway Traffic Safety Administration detailing the threat to public safety posed by her former employer.

Case 3

Geoffrey Glazebrook PE's owns and operates his own small consulting engineering practice. He specializes in pumping and piping systems in the water and wastewater utility industry. His original license was in mechanical engineering, but over many years of practice, he acquired sufficient knowledge and experience to do the limited electrical design for his pump station projects. His daughter, Robin Glazebrook, PE is the structural engineer in the firm.

When the firm completes a set of plans, Robin signs, dates, and seals the structural documents and Geoffrey does the same for the mechanical and electrical plans. Geoffrey formerly served as coordinator for each project and in that role, he signed, dated, and sealed the documents for the entire project. As a part of his succession planning, Geoffrey turned over that project coordinator role and responsibility to his daughter last year and hired an engineering intern to learn the mechanical and electrical aspects of the business.

When Geoffrey dies suddenly, his careful planning pays off. Now seasoned in managing projects and perfectly positioned to replace her father, Robin takes over the management of the firm. Although she has no training or experience in electrical or mechanical engineering, she continues to sign, date, and seal the documents for the entire project as the project coordinator. The new intern, well trained by Geoffrey, has proven skills in the mechanical and electrical design aspects of the job and is capable of working unsupervised.

Case 4

Mildred Claymond, PE, drafted the following certification for the owner of a twenty-acre parcel of land that he was attempting to sell to a shopping center developer.

“I have examined the terrain and subsoil conditions of the subject property and certify that it is suitable as a construction site for a one-story shopping center subject to preserving the southerly two-acres as wetlands.”



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Mildred signed, dated, and sealed the certification and delivered it to her client. He insisted that Mildred revise the document to strike the “subject to” language.

Mildred resisted the client’s arm-twisting, but eventually, she reissued the certificate with the following language:

“I have examined the terrain and subsoil conditions of the subject property and certify that it is suitable as a construction site for a one-story shopping center.”

Case 5

Walter Hogsed, PE is a licensed environmental engineer and the head of the State Environmental Protection Department. The National Environmental Engineering Journal (NEEJ) recruited Walter to write a monthly technical column for their publication. The Journal always attributes the articles to Walter even though he actually relies on Alice, his deputy, to do all the writing. Alice has credentials as an environmentalist but is not a professional engineer.

Alice has complained to Walter that he was claiming credit for her work, but he insisted that the Journal would not recognize her as the author or even a coauthor because she is not a PE. When Alice independently contacted the chief editor of NEEJ, he denied that they have any such restriction on non-engineer authors.

Case 6

Anne Byrche, PE is a licensed traffic engineer and an employee of the Regional Planning Council. Her duties include analyzing the traffic reports and projections prepared by private traffic engineering consultants for commercial developers.

When Anne reviewed the traffic report for a “Development of Regional Impact,” she made a calculation error that would have made the difference between approval or rejection of the development. She made the discovery only after approval of the plan, and too late to reverse the decision.

She immediately disclosed the error to her supervisor, a non-engineer, public administrator, who strongly advised her to keep the matter quiet and tell no one else about it. She ignored his instructions and wrote a full disclosure memo to the supervisor and the Executive Director of the Regional Planning Council.



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Case 7

Hugh Buron, PE manages the local office of XYZ Construction, a national, publicly traded construction management contractor. Hugh is a bidder on a project to build a dam for a regional water management district, but one of the vice presidents of XYZ Construction also sits on the board of the water management district. That board member does not take part in the bidding or the execution of the work.

Case 8

Joan Del Crosse, P.E. heads a small engineering firm that specializes in mechanical systems for public library buildings. She disbanded her marketing department several years ago to cut the expense and uncertainty of results. She now wins new contracts by paying a small fee in the form of a commission to the large architectural firms that win the public contracts and do the hiring of sub-consultants. Her costs are now lower, the results are more reliable, and best of all, she spends most of her time serving her clients instead of searching for work. From her perspective, she has found the “sweet-spot” of consulting engineering.

Case 9

Buford Clark, P.E. owns and operates a geotechnical engineering firm with soil sampling equipment, field crews, and a soils laboratory to analyze data. Buford quotes a property owner his standard fee for a drain field percolation test, but the customer offers double the fee if the test results show that his home site meets state standards for a septic tank and drain field. Buford accepts the offer.

Case 10 (This case was revised on 5 Dec. 2018)

Easter Nicholson, P.E. is a sales engineer for the Rocket Switch Company. Her business card says, “The World’s Best Switches,” and in her sales presentations, she enumerates the engineering flaws of competitors products. She is aware that criticizing her competitors may be viewed as unethical behavior, so she is careful to only find fault with their products. Her “Take No Prisoners” approach has earned her rave reviews and generous bonuses from her employer.



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Conclusion

Remember that when a medical doctor makes a mistake, it jeopardizes a life. When an engineer makes a mistake, it jeopardizes *all* lives. By adopting a personal “Code of Ethics,” you will be taking a crucial step toward protecting the public safety, health, and welfare that is the fundamental obligation of all engineers.

Share your thoughts about this course with the author and others by completing a course review.

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Write a Review

Code of Ethics for Engineers

Preamble

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

I. Fundamental Canons

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.

II. Rules of Practice

1. Engineers shall hold paramount the safety, health, and welfare of the public.

- a. If engineers' judgment is overruled under circumstances that endanger life or property, they shall notify their employer or client and such other authority as may be appropriate.
- b. Engineers shall approve only those engineering documents that are in conformity with applicable standards.
- c. Engineers shall not reveal facts, data, or information without the prior consent of the client or employer except as authorized or required by law or this Code.
- d. Engineers shall not permit the use of their name or associate in business ventures with any person or firm that they believe is engaged in fraudulent or dishonest enterprise.
- e. Engineers shall not aid or abet the unlawful practice of engineering by a person or firm.
- f. Engineers having knowledge of any alleged violation of this Code shall report thereon to appropriate professional bodies and, when relevant, also to public authorities, and cooperate with the proper authorities in furnishing such information or assistance as may be required.

2. Engineers shall perform services only in the areas of their competence.

- a. Engineers shall undertake assignments only when

qualified by education or experience in the specific technical fields involved.

- b. Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control.
- c. Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment.

3. Engineers shall issue public statements only in an objective and truthful manner.

- a. Engineers shall be objective and truthful in professional reports, statements, or testimony. They shall include all relevant and pertinent information in such reports, statements, or testimony, which should bear the date indicating when it was current.
- b. Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.
- c. Engineers shall issue no statements, criticisms, or arguments on technical matters that are inspired or paid for by interested parties, unless they have prefaced their comments by explicitly identifying the interested parties on whose behalf they are speaking, and by revealing the existence of any interest the engineers may have in the matters.

4. Engineers shall act for each employer or client as faithful agents or trustees.

- a. Engineers shall disclose all known or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services.
- b. Engineers 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 and agreed to by all interested parties.
- c. Engineers shall not solicit or accept financial or other valuable consideration, directly or indirectly, from outside agents in connection with the work for which they are responsible.
- d. Engineers in public service as members, advisors, or employees of a governmental or quasi-governmental body or department shall not participate in decisions with respect to services solicited or provided by them or their organizations in private or public engineering practice.
- e. Engineers shall not solicit or accept a contract from a governmental body on which a principal or officer of their organization serves as a member.

5. Engineers shall avoid deceptive acts.

- a. Engineers shall not falsify their qualifications or permit misrepresentation of their or their associates' qualifications. They shall not misrepresent or exaggerate their responsibility in or for the subject matter of prior assignments. Brochures or other presentations incident to the solicitation of employment shall not misrepresent pertinent facts concerning employers, employees, associates, joint venturers, or past accomplishments.
- b. Engineers shall not offer, give, solicit, or receive, either directly or indirectly, any contribution to influence the award of a contract by public authority, or which may be reasonably construed by the public as having the effect or intent of influencing the awarding of a contract. They shall not offer any gift or other valuable consideration in order to secure work. They shall not pay a commission, percentage, or brokerage fee in order to secure work, except to a bona fide employee or bona fide established commercial or marketing agencies retained by them.

III. Professional Obligations

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 development¹ 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.

Footnote 1 "Sustainable development" is the challenge of meeting human needs for natural resources, industrial products, energy, food, transportation, shelter, and effective waste management while conserving and protecting environmental quality and the natural resource base essential for future development.

"By order of the United States District Court for the District of Columbia, former Section 11(c) of the NSPE Code of Ethics prohibiting competitive bidding, and all policy statements, opinions, rulings or other guidelines interpreting its scope, have been rescinded as unlawfully interfering with the legal right of engineers, protected under the antitrust laws, to provide price information to prospective clients; accordingly, nothing contained in the NSPE Code of Ethics, policy statements, opinions, rulings or other guidelines prohibits the submission of price quotations or competitive bids for engineering services at any time or in any amount."

Statement by NSPE Executive Committee

In order to correct misunderstandings which have been indicated in some instances since the issuance of the Supreme Court decision and the entry of the Final Judgment, it is noted that in its decision of April 25, 1978, the Supreme Court of the United States declared: "The Sherman Act does not require competitive bidding."

It is further noted that as made clear in the Supreme Court decision:

1. Engineers and firms may individually refuse to bid for engineering services.
2. Clients are not required to seek bids for engineering services.
3. Federal, state, and local laws governing procedures to procure engineering services are not affected, and remain in full force and effect.
4. State societies and local chapters are free to actively and aggressively seek legislation for professional selection and negotiation procedures by public agencies.
5. State registration board rules of professional conduct, including rules prohibiting competitive bidding for engineering services, are not affected and remain in full force and effect. State registration boards with authority to adopt rules of professional conduct may adopt rules governing procedures to obtain engineering services.
6. As noted by the Supreme Court, "nothing in the judgment prevents NSPE and its members from attempting to influence governmental action . . ."

Note: In regard to the question of application of the Code to corporations vis-a-vis real persons, business form or type should not negate nor influence conformance of individuals to the Code. The Code deals with professional services, which services must be performed by real persons. Real persons in turn establish and implement policies within business structures. The Code is clearly written to apply to the Engineer, and it is incumbent on members of NSPE to endeavor to live up to its provisions. This applies to all pertinent sections of the Code.