

Ethics and Professional Practice



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Presentation Outline

Code of Ethics

NCEES Model Rule

Questions

**Instructions to Recieve 1-hour
of CEU/PDH**

Code of Ethics

The ethical principles governing the engineering profession are embodied in codes of ethics. Such codes have been adopted by state boards of registration, professional engineering societies, and even by some private industries.

An example of one such code is the Rules of Professional Conduct by the National Council of Examiners for Engineers and Surveyors (NCEES). This code is found in Section 240 of the *Model Rules*.

As part of his/her responsibility to the public, an engineer is responsible for knowing and abiding by the code. Additional rules of conduct are also included in the *Model Rules*.

NCEES Rule of Professional Conduct

NCEES Rule of Professional Conduct

The ethical principles are embodied in **codes of ethics**. An example of one such code is the NCEES Rules of Professional Conduct, found in Section 240 of Model Rules and presented here.

The three major sections that the Model Rules addresses:

- (A) Licensee's **Obligation to the Public**
- (B) Licensee's **Obligation to Employers and Clients**
- (C) Licensee's **Obligation to Other Licensees**

Engineering is a “Profession” rather than an “Occupation”

- Professions are based on a large knowledge requiring extensive training.
- Professional skills are important to the well-being of society.
- Professionals have **autonomy** and they are expected to utilize their **independent judgment** in carrying out their professional responsibilities.
- Professions are regulated by ethical standards.

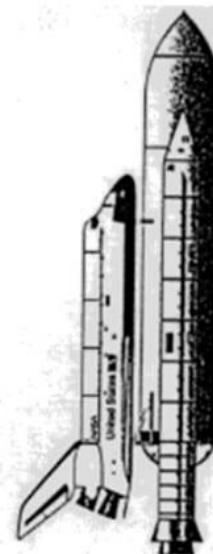
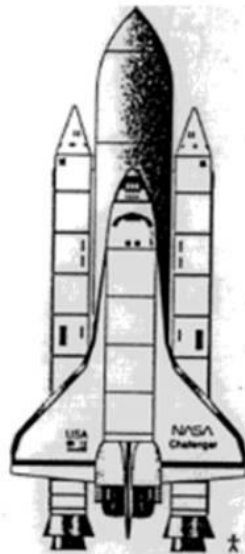
A. LICENSEE'S OBLIGATION to the Public

- 1. Licensees first responsibility is to the public welfare.**
- 2. Licensees shall seal only designs that safeguard the life, health, property, and welfare of the public.**
- 3. Licensees shall be objective and truthful in professional reports**

A. LICENSEE'S OBLIGATION to the Public

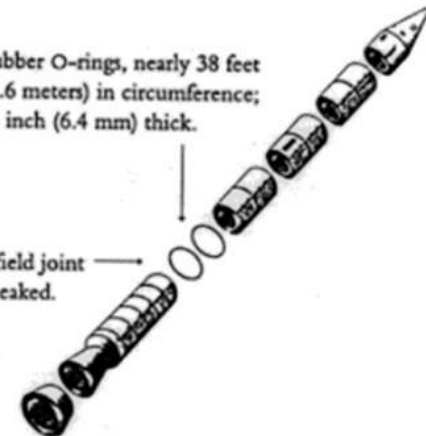
- 4. Licensees shall notify their employer or client when their professional judgment is overruled where the life, health, property, or welfare of the public is endangered.**

Space Shuttle Challenger



Rubber O-rings, nearly 38 feet (11.6 meters) in circumference; 1/4 inch (6.4 mm) thick.

The field joint that leaked.



A. LICENSEE'S OBLIGATION to the Public

- 5. Licensees shall express a professional opinion publicly only when it is founded upon an adequate knowledge**
- 6. Licensees shall not permit the use of their name with any person or firm which is engaging in fraudulent business**
- 7. Licensees having knowledge of violations of any of these Rules shall inform the board**

A. LICENSEE'S OBLIGATION to the Public

- 8. Licensees shall issue no statements or arguments on technical matters which are inspired or paid for by interested parties, unless they explicitly identify the interested parties**

Disclosure Statement

John Doe, PE:

- Received **honoraria** from ABC Company
- Received **research support** from ABC Company
- On the **speakers' bureau** of ABC, Inc
- Served as a **consultant** to ABC Company

B. LICENSEE'S OBLIGATION TO EMPLOYER & CLIENTS

- 1. Licensees shall undertake assignments only when qualified in the specific technical fields**
- 2. Licensees shall not seals a plan dealing with a subject in which they lack competence, nor to any plan not prepared under their supervision.**
- 3. Licensees shall not reveal information obtained in a professional capacity w/o prior consent of the client**

B. LICENSEE'S OBLIGATION TO EMPLOYER & CLIENTS

5. Licensees shall make full prior disclosures to their employers or clients of potential conflicts of interest

6. Licensees shall not accept compensation, financial or otherwise, from more than one party

7. Licensees shall not solicit or accept a professional contract from a governmental body on which an officer of their organization serves as a member.

C. LICENSEE'S OBLIGATION TO OTHER LICENSEES

- 1. Licensees shall not falsify or exaggerate academic or professional qualifications**
- 2. Licensees shall not offer or receive any gift in order to secure Work**
- 3. Licensees shall not attempt to injure the professional Reputation of other licensees**

Questions

Ethics and Professional Practice

1. An engineer testifying as an expert witness in a product liability case should:
 - (A) answer as briefly as possible only those questions posed by the attorneys
 - (B) provide a complete and objective analysis within his or her area of competence
 - (C) provide an evaluation of the character of the defendant
 - (D) provide information on the professional background of the defendant

Ethics and Professional Practice

2. A professional engineer, originally licensed 30 years ago, is asked to evaluate a newly developed computerized control system for a public transportation system. The engineer may accept this project if:
- (A) he or she is competent in the area of modern control systems
 - (B) his or her professional engineering license has not lapsed
 - (C) his or her original area of specialization was in transportation systems
 - (D) he or she has regularly attended meetings of a professional engineering society

Ethics and Professional Practice

3. You and your design group are competing for a multidisciplinary concept project. Your firm is the lead group in the design professional consortium formed to compete for the project. Your consortium has been selected as the first to enter fee negotiations with the project owner. During the negotiations, the amount you have to cut from your fee to be awarded the contract will require dropping one of the consortium members whose staff has special capabilities not available from the staff of the remaining consortium members. Can your remaining consortium ethically accept the contract?
- (A) No, because an engineer may not accept a contract to coordinate a project with other professional firms providing capabilities and services that must be provided by hired consultants.
 - (B) Yes, if your remaining consortium members hire a few new lower-cost employees to do the special work that would have been provided by the consortium member that has been dropped.
 - (C) No, not if the owner is left with the impression that the consortium is still fully qualified to perform all the required tasks.
 - (D) Yes, if in accepting an assignment to coordinate the project, a single person will sign and seal all the documents for the entire work of the consortium.

Ethics and Professional Practice

4. You have an on-site job interview to follow up on an on-campus interview with Company A. Just before you fly to the interview, you get a call from Company B asking you to come for an on-site interview at their offices in the same city. When you inform them of your interview with Company A, they suggest you stop in after that. Company A has already paid for your airfare and, at the conclusion of your interview with them, issues you reimbursement forms for the balance of your trip expenses with instructions to file for all your trip expenses. When you inform them of your added interview stop at Company B, they tell you to go ahead and charge the entire cost of the trip to Company A. You interview with Company B, and at the conclusion, they give you travel reimbursement forms with instructions to file for all your trip expenses. When you inform them of the instructions of Company A, they tell you that the only expenses requiring receipts are airfare and hotel rooms, so you should still file for all the other expenses with them even if Company A is paying for it because students always need a little spending money. What should you do?
- (A) Try to divide the expenses between both firms as best you can.
 - (B) Do as both recruiting officers told you. It is their money and their travel policies.
 - (C) File for travel expenses with only one firm.
 - (D) Tell all your classmates to sign up to interview with these firms for the trips.

Ethics and Professional Practice

5. A new junior engineer in a design company notices a detail in a design that she feels has the potential to be dangerous to the end users. Her superiors explain that this detail was incorporated in the design by the company to save manufacturing time. Furthermore, they assure her that although the analysis is technically correct, this “shortcut” has been used for several years and the company has never been accused of any wrongdoing. What should the engineer do?

- (A) Go along with the advice of the more senior engineers. They have more experience in the field and are most likely right. Besides, if some harm does come from the design, they will take the blame, not her.
- (B) Ask one of her college professors, an expert in the field, to look at the plans and make a recommendation.
- (C) Bring the issue to the attention of the company’s upper nontechnical management.
- (D) Report the company’s violation to the state board and any other appropriate regulatory agencies.

Ethics and Professional Practice

6. On his own time, a professional engineer writes and self-publishes a technical book. The engineer designs his own cover and writes his own ad copy. The cover and promotional literature both brazenly claim that the book is “the best available,” the “most concise,” the “best buy,” and the “most authoritative.” Both the cover and the ad copy repeatedly slam the book’s other major competitor. A dissatisfied reader who relied on the cover copy when buying the book complains to the engineer’s professional society that such advertising methods violate the society’s code of ethics. What should the society do?

- (A) Do nothing. Codes of ethics are intended to guide providers of consulting services, not authors.
- (B) Do nothing. Such “puffery” is a common marketing tool, and nobody believes it anyway.
- (C) Request that the engineer provide supporting data, comparisons, and studies to support the claims before taking further steps.
- (D) Immediately charge the engineer with making outlandish, unsupported, and misleading claims. File an injunction and/or lawsuit prohibiting the engineer from using such wording in the future.

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7. What is the relationship between ethical requirements and legal requirements?
- (A) They place restrictions on the same actions.
 - (B) They cover none of the same actions.
 - (C) Ethical requirements add restrictions not required by the law.
 - (D) Legal actions are ethical actions.

Some things that are legally right, are not necessarily morally [or ethically] right.

Abraham Lincoln

Ethics and Professional Practice

8. Complete the sentence: “Engineers are to uphold the health, safety, and public
- (A) trust.”
 - (B) welfare.”
 - (C) confidence.”
 - (D) good.”

Ethics and Professional Practice

9. Ideally, what is the precedence (from highest importance to lowest importance) of your ethical responsibility?

- I. yourself
- II. your client
- III. society as a whole
- IV. your profession

- (A) I-II-IV-III
- (B) IV-II-III-I
- (C) II-IV-III-I
- (D) III-II-IV-I

Ethics and Professional Practice

10. The National Council of Examiners for Engineering and Surveying *Model Rules* contains guidelines for licensees' rules of professional conduct. This outlines a licensee's obligation to which of the following entities?

- I. society ✓
- II. employer and clients ✓
- III. licensing board
- IV. other licensees ✓

- (A) I and II only
- (B) I and IV only
- (C) I, II, and IV
- (D) I, II, III, and IV

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11. Complete the sentence: “Information that is proprietary to a client

- (A) may not be used in the work performed for the client.”
- (B) may be divulged to third parties.”
- (C) may be shared with other members of your design firm.”
- (D) should be kept absolutely confidential.”

Construction Value Engineering

(d) Acceptance of the Proposal. If the Value Engineering Proposal is accepted, the changes will be incorporated into the contract through changes in the quantities of unit bid items, new agreed price items, or by force account, as appropriate. The cost of the revised work will be paid directly as completed. In addition to such payment, the Department will pay the Contractor a Value Engineering Incentive according to the following criteria.

- A = Adjusted cost
- B = Original cost
- C = Department's cost incurred as a result of investigation and application of the proposal

(1) For contracts less than \$1,000,000 in awarded value, the Contractor will be paid as follows.

- a. When the total cumulative value of all Value Engineering Proposals submitted for an individual contract is equal to or less than 1.5 percent of the awarded contract value, payment will be $0.5 (B-A-C)$.
- b. When the total cumulative value of all Value Engineering Proposals submitted for an individual contract is greater than 1.5 percent of the awardable contract value, payment will be $0.65 (B-A-C)$ for that

Standard Specifications
for Road and Bridge
Construction

Ethics and Professional Practice

Construction Value Engineering

54. An engineering firm is hired by a state agency to supervise the construction of a large wastewater treatment plant. The design of the plant is prepared by the state agency. A clause in the contract states that any money saved as a result of design improvements suggested by the contractor shall be split evenly between the state and the contractor. Knowing that they are thoroughly familiar with the plans, the contractor wants to hire the engineering firm performing the inspection services to review the plans for improvements. Should the engineering firm accept this employment?

- (A) Yes, without hesitation. It is a win-win-win situation; the engineering firm makes money, the contractor makes money, and the state saves money. Furthermore, the design is ultimately improved.
- (B) Yes, as long as the contractor and the state evenly split the engineering fees.
- (C) No, accepting work from the contractor while acting as a representative of the owner would be a conflict of interest.
- (D) No, money should be paid to the contractor only for original ideas. It is unethical for any engineering firm to assist the contractor in devising improvements.

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November 2016

JP Morgan pays \$264m to settle China 'bribery' probe

7 hours ago | **Business**

US bank JP Morgan Chase is to pay \$264m (£212m) to settle claims it hired the children of highly placed Chinese officials to gain business in China.

The Department of Justice called the scheme "bribery by any other name" and said it threatened national security.

The Securities and Exchange Commission (SEC) and the Justice Department (DoJ) began an investigation in 2013.

The bank will pay the SEC \$130m for violations under the Foreign Corrupt Practices Act.

It is also expected to pay \$72m to the US Justice Department and \$61.9m to the Federal Reserve Board of Governors.

The Foreign Corrupt Practices Act, which effectively bans US companies from paying foreign government officials to help them secure business, is one of the strictest bribery laws in the world.

Ethics and Professional Practice

12. After making a presentation for an international project, an engineer is told by a foreign official that his company will be awarded the contract, but only if it hires the official's brother as an advisor to the project. The engineer sees this as a form of extortion and informs his boss. His boss tells him that, while it might be illegal in the United States, it is a customary and legal business practice in the foreign country. The boss impresses upon the engineer the importance of getting the project, but leaves the details up to the engineer. What should the engineer do?

- (A) He should hire the official's brother, but insist that he perform some useful function for his salary.
- (B) He should check with other companies doing business in the country in question, and if they routinely hire relatives of government officials to secure work, then he should do so too.
- (C) He should withdraw his company from consideration for the project.
- (D) He should inform the government official that his company will not hire the official's brother as a precondition for being awarded the contract, but invite the brother to submit an application for employment with the company.

Ethics and Professional Practice

13. Complete the sentence: “It is generally considered unethical to moonlight as a consulting engineer while you are working for your primary employer because

- (A) you shouldn't be competing with your primary employer for clients.”
- (B) you can't do a good job for your primary employer if you come to work in the morning tired.”
- (C) you might be tempted to use proprietary information from your current employer.”
- (D) “double dipping” (i.e., drawing two paychecks) is unfair to the other engineers in the company.”

Ethics and Professional Practice

14. Complete the sentence: “A professional engineer who took the licensing examination in mechanical engineering
- (A) may not design in electrical engineering.”
 - (B) may design in electrical engineering if she feels
 - (C) may design in electrical engineering if she feels competent and the electrical portion of the design is insignificant and incidental to the overall job.”
 - (D) may design in electrical engineering if another engineer checks the electrical engineering work.”

Ethics and Professional Practice

15. An engineer is consulting for a construction company that has been receiving bad publicity in the local papers about its waste-handling practices. Knowing that this criticism is based on public misperceptions and the paper's thirst for controversial stories, the engineer would like to write an article to be printed in the paper's editorial page. What statement best describes the engineer's ethical obligations?

- (A) The engineer's relationship with the company makes it unethical for him to take any public action on its behalf.
- (B) The engineer should request that a local representative of the engineering registration board review the data and write the article in order that an impartial point of view be presented.
- (C) As long as the article is objective and truthful, and presents all relevant information including the engineer's professional credentials, ethical obligations have been satisfied.
- (D) The article must be objective and truthful, present all relevant information including the engineer's professional credentials, and disclose all details of the engineer's affiliation with the company.

Ethics and Professional Practice

16. A survey crew is hired by the general contractor on a large government project to verify pertinent data on the owner-supplied plans. While performing their functions, the survey crew is approached by a subcontractor who wants them to perform some work for him on the same project. He states that he will pay for this additional work and notes that it will be easy for the survey crew to perform both services at the same time. What should the survey crew do?

- (A) The survey crew should accept this additional work as long as they have the equipment and capacity to perform both services adequately.
- (B) The survey crew should accept this additional work as long as the circumstances are fully disclosed and agreed to by all interested parties.
- (C) The survey crew should not accept this additional work as it will be a conflict of interest.
- (D) The survey crew should not accept compensation for any additional work because they cannot bill two parties for work performed on the same job.

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17. Without your knowledge, an old classmate applies to the company you work for. Knowing that you recently graduated from the same school, the director of engineering shows you the application and resume your friend submitted and asks your opinion. It turns out that your friend has exaggerated his participation in campus organizations, even claiming to have been an officer in an engineering society that you are sure he was never in. On the other hand, you remember him as being a highly intelligent student and believe that he could really help the company. How should you handle the situation?

- (A) You should remove yourself from the ethical dilemma by claiming that you don't remember enough about the applicant to make an informed decision.
- (B) You should follow your instincts and recommend the applicant. Almost everyone stretches the truth a little in their resumes, and the thing you're really being asked to evaluate is his usefulness to the company. If you mention the resume padding, the company is liable to lose a good prospect.
- (C) You should recommend the applicant, but qualify your recommendation by pointing out that you think he may have exaggerated some details on his resume.
- (D) You should point out the inconsistencies in the applicant's resume and recommend against hiring him.

Ethics and Professional Practice

18. While working to revise the design of the suspension for a popular car, an engineer discovers a flaw in the design currently being produced. Based on a statistical analysis, the company determines that although this mistake is likely to cause a small increase in the number of fatalities seen each year, it would be prohibitively expensive to do a recall to replace the part. Accordingly, the company decides not to issue a recall notice. What should the engineer do?

- (A) The engineer should go along with the company's decision. The company has researched its options and chosen the most economic alternative.
- (B) The engineer should send an anonymous tip to the media, suggesting that they alert the public and begin an investigation of the company's business practices.
- (C) The engineer should notify the National Transportation Safety Board, providing enough details for them to initiate a formal inquiry.
- (D) The engineer should resign from the company. Because of standard nondisclosure agreements, it would be unethical as well as illegal to disclose any information about this situation. In addition, the engineer should not associate with a company that is engaging in such behavior.

Instructions to Recieve 1 hour of CEU/PDH

1. Answer the questions in the preceding slides
2. Email your answers to: Dr. Soliman Khudeira, PE, SE.
Soliman.Khudeira@iit.edu
3. You will be emailed a certificate of 1-hour CEU/PDH, if you score 70% or more

End