

# Engineering Ethics: Objectivity and Truthfulness

**The Live Webinar will begin shortly.....**

*Upcoming PE Institute Live Webinars*

Wednesday, April 26 at 2pm

[We Don't Talk Anymore...Communications Skills for Navigating the Modern Workplace](#)

Wednesday, May 3 at 2pm

[New Approach to Engineering Marketing: How to Future-Proof Your Firm](#)



NATIONAL SOCIETY OF  
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# Engineering Ethics

*“Among the universal ethical values are honesty, integrity, promise-keeping, fidelity, fairness, respect for others, responsible citizenship, pursuit of excellence and accountability.”*

– Michael Josephson

# Engineering Ethics

- **Black and White Areas – Easy**
  - Right vs. Wrong
- **Gray Areas – Tougher**
  - Right vs. Right
  - Lesser of the Evils/Dilemma
- **Other Factors**
  - Time/Money
  - Family
  - Career
  - Reputation



# Engineering Ethics



- **Why Study Engineering Ethics?**

- To Understand the Standards Governing What is Acceptable Behavior in the Practice of Engineering

- **Why Practice Engineering Ethically?**

- Personal Injury/Property Damage
- Disciplinary Action
- Impact on Reputation, Employer, Clients, Profession
- Possible Loss of Job, Business, etc.

# Engineering Ethics

*“All products of technology present some potential dangers, and thus engineering is an inherently risky activity... Engineering should be viewed as an experimental process. It is not, of course, an experiment conducted solely in a laboratory under controlled conditions. Rather, it is an experiment on a social scale involving human subjects”*

– Martin and Schinziger, Ethics in Engineering

# Engineering Ethics

- **Professional Codes of Ethics**

- A code of professional ethics results when a field organizes itself into a profession. The resulting code is central to advising those professionals how to conduct themselves, to judge their conduct and to understand the profession.

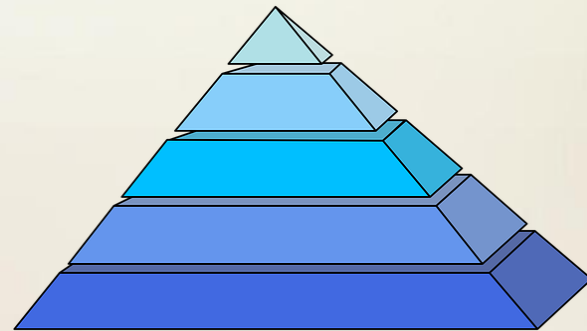




# Engineering Ethics

## Hierarchy of Ethical Obligations

- **Primary:** Ethical Obligations to the Public
- **Secondary:** Ethical Obligations to Employer or Client
- **Tertiary:** Ethical Obligations to Other Professionals and Other Parties



# Engineering Ethics

Three Basic Ethical Obligations – (1) Public, (2) Employer/Client and (3) Other Professionals...

- Never Mutually Exclusive - Reciprocal
- Not A “Zero Sum Game”
- All Need To Be Considered At All Times
- Should Be Complementary to Integrated With One Another to the Fullest Extent Possible
- Ethical Integration = Professional Integrity



# Engineering Ethics

## Seven Principles Impacting Each Obligation

1. **Protecting The Public Health, Safety and Welfare**
2. **Demonstrating Professional Competence**
3. **Maintaining Objectivity/Truthfulness**
4. Addressing Conflict of Interest
5. Preserving Confidentiality
6. Receiving and Providing Valuable Consideration
7. Emerging Areas/Emerging Challenges



# Engineering Ethics

- This session will focus on objectivity and truthfulness—previously encountered site conditions; employment—reassignment to another location; public health, safety, and welfare—former employee’s participation in a public safety standards hearing; and confidentiality—access to competitor’s proposal.



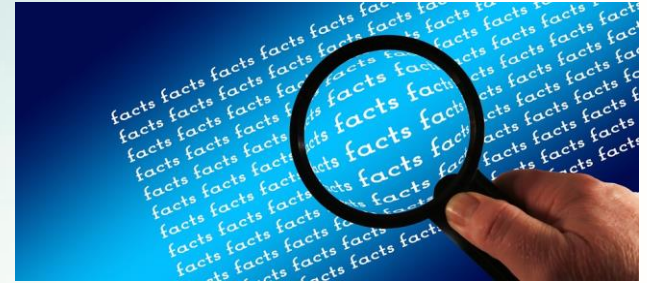
# Engineering Ethics

## Objectivity and Truthfulness— Previously Encountered Site Conditions

*Case No. 16-8*



# Engineering Ethics



## Facts:

- Engineer A is contacted by Client B seeking Engineer A's services as part of the design of a new facility for the Client B. Following discussions with Client B regarding the scope of work to be performed by Engineer A and after Engineer A's preliminary investigation and inspection of the site, the preparation of a preliminary estimate of the estimated amount of time it would take to complete the assignment, Engineer A advises the Client B that the work could be completed within 150 hours under a "best case scenario". At the time of these discussions, Engineer A knew that a similar facility at a nearby location in which Engineer A was involved in for another client, Client , encountered unanticipated site conditions that resulted in significant additional time for Engineer A to complete the final design.



# Engineering Ethics

## Facts:

- The previously encountered site conditions ultimately resulted in Engineer A significantly exceeding his original estimate and as a result, additional costs to Client C. Engineer A did not disclose the circumstance involved in the unanticipated site conditions that resulted in significant additional time for Engineer A to complete the final design for Client C design issues to Client B.



# Engineering Ethics

## Question:

- Was it unethical for Engineer A to fail to disclose to Client B the unanticipated site conditions that resulted in significant additional time for Engineer A to complete the final design for Client C?





# Engineering Ethics

## Section II.3. - Code of Ethics:

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



# Engineering Ethics

## Section II.3.a. - Code of Ethics:

*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.*



# Engineering Ethics

## Section II.4. - Code of Ethics:

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



# Engineering Ethics

## Section II.5. - Code of Ethics:

*Engineers shall avoid deceptive acts.*



# Engineering Ethics

## Section III.1.b. - Code of Ethics:

*Engineers shall advise their clients or employers when they believe a project will not be successful.*



# Engineering Ethics

## Section III.3.a. - Code of Ethics:

*Engineers shall avoid the use of statements containing a material misrepresentation of fact or omitting a material fact.*



# Engineering Ethics



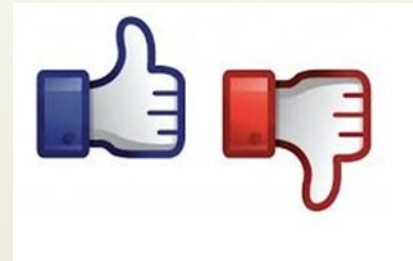
- It was unethical for Engineer A to fail to disclose to Client B the previously encountered site conditions that resulted in significant additional time for Engineer A to complete the final design for Client C.

# Engineering Ethics

## Polling Question:

It is unethical for a professional engineer to include a budget contingency to cover any unexpected or unanticipated circumstance that could arise in connection with the negotiated scope of work?

- 1. Yes
- 2. No
- 3. Not Sure





# Engineering Ethics

## Employment—Reassignment to Another Location

### *Case No. 16-9*



# Engineering Ethics



## Facts:

- Engineer A works for Company X, an engineering firm owned by Engineer B. Company X does business in several states but is headquartered in State M. Company X has a policy to not terminate an employee unless Company X provides at least 90 days of written notice of termination to the employee. As a result of financial issues confronting Company X, Engineer B decides to reassign some of its employees, including Engineer A to an out of state location 200 miles away from Company X headquarters in State M where Engineer A has been working.

# Engineering Ethics

## Facts:

- As a result, Engineer A will need to relocate with his family. Company X advises reassigned employees that they have one week to make a decision and their failure to accept reassignment would constitute their resignation of their position with Company X. Engineer A is unable to relocate due to family issues and claims that as a practical matter, Engineer B's decision to unilaterally reassign Engineer A to another location constitutes a violation of Company X's written notice policy of providing at least 90 days of "written notice of termination", and therefore unethical.



# Engineering Ethics

## Question:

- Was it unethical for Engineer B to unilaterally reassign Engineer A to another location without providing “90 days of written notice of termination” as stated in Company X policy?



# Engineering Ethics

## Section I.3. - Code of Ethics:

*Engineers, in the fulfillment of their professional duties, shall issue public statements only in an objective and truthful manner.*



# Engineering Ethics

## Section II.4. - Code of Ethics:

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



# Engineering Ethics



- It was not unethical for Engineer B and Company X to unilaterally reassign Engineer A to another location without providing “90 days of written notice of termination” as stated in Company X policy.

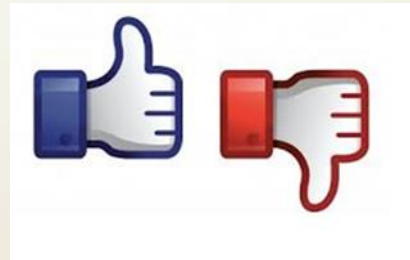


# Engineering Ethics

## Polling Question

In today's employment market, it is not unreasonable for an employer to expect an engineering employee to relocate to another location on short notice based upon business requirements.

- 1. Yes
- 2. No
- 3. Not Sure





# Engineering Ethics

## Public Health, Safety and Welfare—Former Employee's Participation in a Public Safety Standards Hearing

*Case No. 16-10*



# Engineering Ethics

## Facts:

- Engineer A works for Company X in connection with the design and manufacturing of a new consumer product. During and following the company's standard safety testing process (which has been completed and has demonstrated that the new consumer product is within acceptable safety parameters), Engineer A observes what Engineer A believes are inconsistent product performance issues that in Engineer A's opinion raise unique safety concerns.



# Engineering Ethics

## Facts:

- Engineer A recommends to Supervisor B that Company X conduct a new series of tests to determine whether the new consumer product will be operated safely by consumers. Current national product safety standards do not yet address the new product or its potential impact on consumer safety. There are currently no governmental or industry standards relating to this new consumer product other than general and standard product safety-testing policies and procedures.



# Engineering Ethics

## Facts:

- Because of the potential cost and the delay that may result due to additional testing, Company X rejects Engineer A's recommendation that it perform additional safety testing. Later, Engineer A resigns from Company X. One year later, the relevant government agency announces a public safety standard hearing in connection with a series of new consumer products which includes the new product developed by Company X and its competitors. Engineer A is considering participating as a witness at the public safety standards hearing.



# Engineering Ethics

## Question:

- Would it be ethical for Engineer A to participate as a witness at the public safety standard hearings?



# Engineering Ethics

## Section I.1. - Code of Ethics:

*Engineers, in the fulfillment of their professional duties, shall hold paramount the safety, health, and welfare of the public.*





# Engineering Ethics

## Section II.1.a. - Code of Ethics:

*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.*



# Engineering Ethics

## Section II.1.b. - Code of Ethics:

*Engineers shall approve only those engineering documents that are in conformity with applicable standards.*





# Engineering Ethics

## Section II.3.a. - Code of Ethics:

*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.*



# Engineering Ethics

## Section II.3.b. - Code of Ethics:

*Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.*



# Engineering Ethics

## Section III.4. - Code of Ethics:

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



# Engineering Ethics



## **Conclusion:**

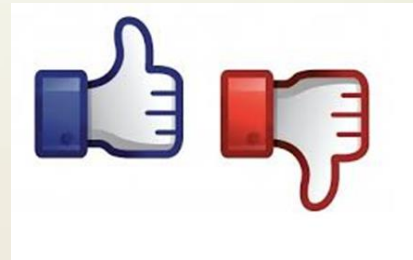
NSPE Board of Ethical Review does not believe there is any clear ethical prohibition on Engineer A from participating in the public safety standards hearing as long as (1) Engineer A possesses the technical competence to serve as an engineering expert in the area in which Engineer A is testifying; (2) Engineer A testifies in an objective and truthful manner; and (3) Engineer A does not disclose any information regarding Company X's product that will violate any confidentiality agreements with Company X. If, in fact, Engineer A has a good faith belief that Company X or other industry products raise public safety concerns for consumers, Engineer A should bring this to the attention to the appropriate governmental agency or authorities for further review, investigation and analysis consistent with the NSPE Code of Ethics.

# Engineering Ethics

## Polling Question:

In my opinion, if an engineer works for a company and later leaves employment with that company, the engineer cannot ethically testify against that company in any future legal proceedings relating to the engineer's work with that company.

- 1. Agree
- 2. Disagree
- 3. Not Sure



# Engineering Ethics

## Confidentiality—Access to Competitor's Proposal

### *Case No. 16-12*



# Engineering Ethics



## Facts:

- Engineer A, principal owner of Firm X, is in the process of preparing an engineering proposal on a private project for Client M which includes preliminary design information and sub-proposals from other team members including sub-consultant Firm Y. One day before Firm X meets with the Client M to make an oral presentation and provide a preliminary proposal on the project for Client M, Firm Y informs Engineer A that through a third party, Firm Y has gained access to a copy of the engineering proposal prepared and presented by Firm Z to Client M for the same project the prior day. Engineer A and Firm X will be making the oral presentation and proposal to Client M on the following day.



# Engineering Ethics

## Question:

- What are Engineer A's ethical obligations under the circumstances?





# Engineering Ethics

## Section I.4. - Code of Ethics:

*Engineers, in the fulfillment of their professional duties, shall act for each employer or client as faithful agents or trustees.*



# Engineering Ethics

## Section II.1.d. - Code of Ethics:

*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.*



# Engineering Ethics

## Section II.1.f. - Code of Ethics:

*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.*



# Engineering Ethics

## Section II.4. - Code of Ethics:

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



# Engineering Ethics

## Section III.1. - Code of Ethics:

*Engineers shall be guided in all their relations by the highest standards of honesty and integrity.*



# Engineering Ethics



## Conclusion:

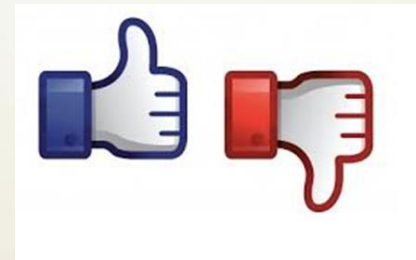
Engineer A has an obligation to immediately advise Firm Y that its access to Firm Z's proposal was improper, and that under no circumstances should Firm Z's proposal be reviewed or considered by Firm Y. In addition, in light of this development, Engineer A should take immediate steps to remove Firm Y as a sub-consultant on Engineer A's design team. Since it appears from the facts that Firm Y did not review Firm Z's proposal, it does not appear that Engineer A had an obligation to report the impropriety to Client M prior to making the proposal to Client M on the following day. However, if Engineer A has a reasonable suspicion to believe that Firm Y may have had access to or reviewed Firm Z's proposal, Engineer A has an obligation to report his concerns to Client M.

# Engineering Ethics

## Polling Question

Based on the circumstances of the previous case, it would be unethical for Engineer A to use the services of Firm Y on any future projects either for Client M or any other clients.

- 1. Agree
- 2. Disagree
- 3. Not Sure





# Engineering Ethics

## Review of Key Issues





# Engineering Ethics

- It is important to study engineering ethics because it is critical to understand the standards governing what is acceptable behavior in the practice of engineering.
- It is important to practice engineering ethically because if you do not, the following could occur - personal injury, property damage, disciplinary action, impact on the reputation or the employer, clients, profession and possible loss of job or business.
- Engineers having knowledge of any alleged violation of this Code should 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.



# Engineering Ethics

- Among the universal ethical values are honesty, integrity, promise-keeping, fidelity, fairness, respect for others, responsible citizenship, pursuit of excellence and accountability.
- Black and white areas – right vs. wrong issues are easiest to resolve.
- Other factors such as time, money, family, career, reputation affect ethical decision-making.



# Engineering Ethics

**Thank  
You!**

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# Engineering Ethics: Objectivity and Truthfulness

**To receive credit for this course, each registrant will need to take the quiz below and pass with a score of 70 or above. Click link**

**<http://quiz.nspe.org/quiz/2017springethics2.aspx>**

**to take the quiz.**

# Engineering Ethics: Objectivity and Truthfulness

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to take a short survey.**